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ABSTRACT

Program models are described and successful practices are surveyed in training teachers for gifted and talented students. In a section on assumptions and issues, the teacher's role is discussed in terms of classroom innovation and development of attitudes, skills, and abilities in students; and alternatives for teacher training programs are outlined. Two criteria necessary for teachers of the gifted are noted to be an ability to relate effectively to the group of youngsters being taught and an openness to change; and suggestions for assessing teacher competency are given. Presented is an analysis of various preservice training programs and a comparison of the major methodological differences in them, as well as a review of past and current practices. Variations of inservice training models are described, compared, and contrasted, and evaluation results are reported for each of the following: summer institutes, demonstration centers, and service centers. Appended is a list of university training programs offering either graduate or undergraduate degrees in education of the gifted. (SB)

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Training Teachers for the Gifted and Talented: A Comparison of Models

by
C. June Maker

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Delineations

This book is intended as a description of models of existing programs and as a survey of practices that have appeared successful in the training of teachers for gifted and talented students. It is not designed to promote a specific model, but rather to present alternative models with their unique strengths and weaknesses. The book also examines some questions which are raised by these teacher training models and makes some specific recommendations.

The scope is limited to programs designed for the training of teachers for the gifted and talented. It is understood that many programs and procedures for educating teachers of other groups of exceptional children may have specific applicability. A further limitation of the book is that it deals with general procedural models rather than specific methods to be employed in the day to day training of a teacher.

About the Author

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Assumptions and Issues

OUR SOCIETY is constantly changing. Our knowledge is growing so rapidly that experts in each field can scarcely keep up, textbooks are out of date before they are published, our values are radically different from those of our parents. The only constant is change itself. Alvin Toffler calls it *Future Shock* and points us to this staggering data:

> The last 50,000 years of man's existence can be divided into 800 lifetimes. 650 were spent in caves, 730 without communication from one lifetime to another, 796 without measurement of time, 798 without electric motors. The overwhelming majority of all the material goods we use in daily living have been created in our present lifetime.
>
> The earth's urban population will double in eleven years.
>
> Half the energy consumed by man in the last 2,000 years has been consumed in the last 100.
>
> There is a doubling of the total output of goods and services in advanced societies about every fifteen years, and the doubling times are shrinking.
>
> It took the human race more than one million years to be able to travel at 100 mph, 58 more years to travel 400 mph, 20 years to double that, and only 22 years to increase this to 18,000 mph.
>
> New chemical elements were discovered at about the rate of one every 200 years prior to and including the 15th century. Since 1900 we have been isolating the remaining elements at a rate of about one every three years.
>
> The total number of scientific journals and articles is doubling every fifteen years. (Toffler, 1970)

Education, especially the education of gifted and talented children, has failed to keep pace with the changes in society. Gifted children, who will be among the leaders of tomorrow, are at present among the most bored in our classrooms, and few of those who do not withdraw or drop out ever realize their full potential. As educators, we are given the challenge of preparing students to be successful adults, but we no longer have the satisfaction of knowing they will live in a society similar to our own and preparing them for it. If we continue to educate them to live in a world like the one we know, we will continue to educate them to the past, and not the future which is rushing at all of us with ever increasing speed.

The teacher is the most important person in this picture. It is the teacher who must translate theory into practice, help students acquire the skills of discovery, instill a love of learning, impart the tools for gaining new knowledge and analyzing the known, and guide students toward the ability to accept values different from their own. Above all, it is teachers who must provide students with a way to adapt to a constantly changing world. If our teachers are to be adequately prepared for this task, they themselves must learn how to become facilitators of the change process. They must encourage school systems to be innovative and to keep abreast of community needs. They must be innovators in their classrooms by developing alternative ways to teach instead of trying to find the "right" way. Parents have a right to expect from them an attitude of acceptance of change which will keep those students from withdrawal or attachment to a constantly vanishing past or obsolescent present. Teachers must develop in their students an ability to deal effectively with change, so that they may be released into society as fully participating, productive, and successful persons—persons capable of realizing their potential. If teachers are to be agents or facilitators of change, their training needs to reflect this need for developing attitudes and skills which will enable them to carry out this function.

The Teacher's Role in School System Change

Writers and researchers in the fields of education and sociology have considered the key role of teachers in the process of educational change. Leithwood and Russel (1974) state that

> while the principal is a centre of communication the teacher has ultimate responsibility for effecting classroom change and hence the

initiation of change by the principal must be as a stimulant to the teacher's assumption of responsibility for change. Such initiation cannot be forced nor should it reduce the teacher's important decision-making responsibilities, but only make clearer how the principal can be used to facilitate the changes envisioned by the teacher. Most important, the teacher must be made aware that his actions are endorsed and supported by the principal. (p. 9)

Leithwood and Russel are especially concerned with the teacher's role and responsibility in curriculum development and believe that only the teacher can make necessary decisions dealing with specification of objectives, accumulation of materials, choosing instructional techniques, and evaluation. They see the most realistic situation as being one of substantial support for the teacher through relevant inservice training and consultative persons/agencies prepared to act on needs they have identified with the teacher. They conclude that teacher responsibility for curriculum does not imply that administrative personnel, subject matter specialists, consultants, and curriculum developers cannot assist the teacher. Teachers should be responsible for specifying objectives, identifying needs, critically evaluating materials and strategies, and making the final decision about adoption or adaptation (within budget limitations), for "it is the teacher who is ultimately held accountable for the students subjected to the curriculum" (p. 20).

Fox (1966) presents a somewhat different point of view:

Typically, however, the focus at the school level is on what is to be changed and on the innovation to be introduced, with teachers as a target, rather than on a process of problem-solving. The driving force for educational change is seen as coming from the outside. Little attention has been given to the knowledges, skills, strategies and processes involved in teachers and school staffs diagnosing the actual need for change, identifying and selecting or creating a variety of alternative approaches, developing strategies for the trial of one or more approaches, gathering data during the process of change, modifying and adapting the change plan in view of experience, using both in-school and out-of-school resources wisely, assessing the consequences of the change efforts and sharing the results of such efforts with others within the profession. (p. 23)

Fox continues by examining the characteristics and knowledge that will enable teachers to play their role effectively in the process of general educational change as a function of the uniqueness of educational change. Some of the unique aspects which have implications for teacher needs are:

1. "The innovation is likely to require change in the behavior of the teacher, with accompanying changes in his attitudes, understandings, skills and values."
2. An innovation is more likely to be adapted than adopted because of the differences in school situations.
3. Innovation for the teacher may involve the use of new conceptual tools by the teacher, a new orientation toward interacting with students, or the application of an inquiry approach to learning.
4. Teachers are involved actively in a number of roles in the change process: innovator, adopter, adapter, action researcher, diffuser . . . "rather than simply being targets for someone else's change efforts."
5. "Teachers feel they are not free agents to change current practice but are bound to the expectations of parents, school administrators and their own colleagues" (p. 23).

Even though particular changes in behavior or program may be welcomed by the teacher, their very newness makes it difficult for parents, administrators, or children to predict the course of affairs and shakes their confidence in the teacher. There is dis-ease until the old behavior is reestablished or the new behavior institutionalized. Fox offers additional insight by presenting the model shown in Figure 1. In this model the teacher and/or the school staff are engaged in a process of problem solving as they work to improve the educational program. Becoming familiar with a particular innovation which has been used elsewhere may help the staff to clarify a concern they have had before, but unless the new ideas speak to some kind of concern, it is highly unlikely that they will be adopted, utilized effectively, or institutionalized. In other words, a consultant, university professor, researcher, or other outsider does not stimulate lasting change in an educational system unless several conditions are met within the school system itself, within the teacher, and within the interactive relationship that exists between the outsider and the staff of the school. Once a certain innovation is adapted and adopted, the teacher also plays a key role in the evaluation of the success of practices, making needed improvements and disseminating information about successes.

These three authors present two of the basic views of the teacher's role in educational change.

The first, presented by Leithwood and Russel, assumes that the principal or some other person will be the initiator, while the teacher will have the major role in deciding what is to be changed and how. Fox sees the teacher in all of the roles, including initiator, on the basis of needs identified by the teacher. The third view of the teacher's role is alluded to in the first quote from Fox. This view sees the teacher as an object to be changed and/or as an instrument to carry out someone else's decisions about changes.

Of the three roles, the view taken in this book is that the most effective is the problem solving approach, since changes accomplished by this method will be based on a need felt by the teacher, will be developed to fit the unique school situation, and hence can have a lasting effect. Fox's conception of this role, however, does not describe two of the major drawbacks of this approach to change. First, it leaves all the responsibility for initiation and recognition of needs to the teacher, seemingly without considering the impact of a persuasive outsider. An outsider who can create a sense of dissatisfaction with the status quo is necessary in many cases to develop a recognition of problems by the teacher. In some schools, nothing would happen if all the impetus for change were to come from the teachers. Second, assuming this attitude toward the process of change appears to require more time, effort, and money than the other conceptions and thus requires a greater commitment from the school as a whole. For this reason, few schools have a problem solving approach to educational change. If the changes are to be relevant and lasting, the extra time and effort will be well spent.

Regardless of the role one expects a teacher to assume in the total picture, that teacher must be able to accept changes and develop alternative attitudes, skills, and abilities which will enable him or her to carry out the necessary changes successfully.

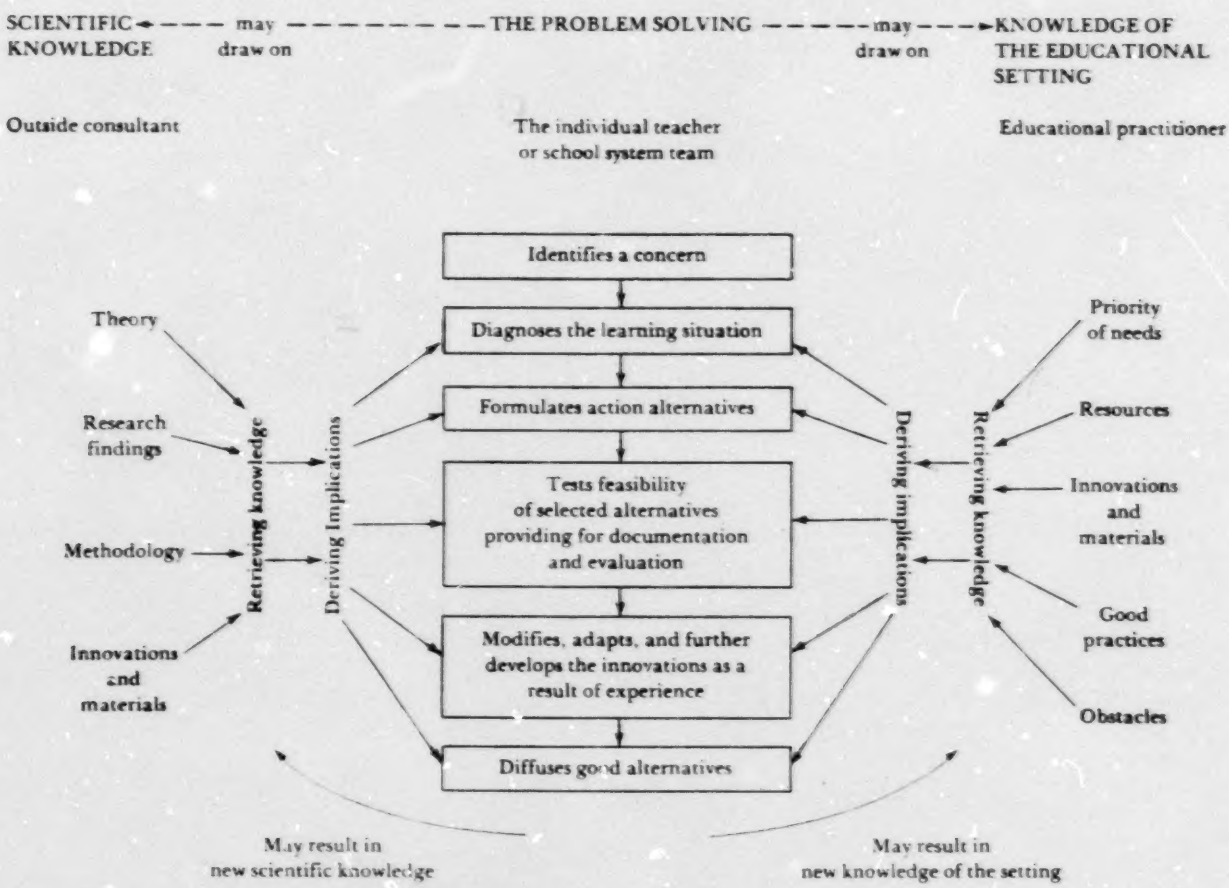

Figure 1. Educational innovation and change through a process of problem solving

The Teacher's Role in Classroom Change

The teacher's role in classroom innovation is similar to his or her role in the larger context of school system change. In addition to considering changes in basic techniques, curriculum, texts, and other such areas, however, the teacher needs to be able to adapt certain techniques to the differing needs of unique students. The class as a group will change from year to year, and some of the most successful methods used with one group will fail utterly with another because of differences in social interaction, abilities, space, and other characteristics of the children.

The school population is changing even more rapidly now than in the past. Carl Rogers (1969) lists some of the characteristics he sees as part of an "emerging person of tomorrow." That person is one who:

- Values authenticity.
- Is opposed to highly structured, inflexible institutions.
- Finds educational institutions mostly irrelevant and futile.
- Is a searching person without any neat answers.
- Is highly aware.
- Is active in the pursuit of causes in which he believes.

And most of all, "He wants *his* learning to involve feelings, to involve the *living* of learnings, the *application* of relevant knowledge, a meaning in the here and now" (p. 220).

Students in a seminar conducted by the ERIC Clearinghouse on Handicapped and Gifted Children early in 1975 expressed the same desires pointed out by Rogers. They wanted more course choices; more career education and counseling; fewer requirements; internship and apprenticeship experiences; and teachers who "can get into your skin and see what's going on inside of you." Most of all they wanted to relate learning to life.

As more and more of these "persons of tomorrow" enter classrooms, teachers will be called on to demonstrate the connection between learning and life. The teacher will have to be able to assume the problem solving role in his or her individual classroom with help from both outsiders (other teachers, consultants, researchers, professors, administrators, curriculum specialists, parents, and others) and insiders (students). In each classroom, the teachers will need to be the facilitators of problem solving processes more and more, the imparters of information less and less.

The Teacher's Role in Developing Attitudes, Skills, and Abilities in Students

The teacher's most important function as a change agent lies in the realm of the changes he or she is able to effect in students. The most relevant evaluations of educational programs are based in the amounts and kinds of changes, both positive and negative, that have occurred in the target population. The ultimate evaluation, of course, is in the lives of the students themselves. But in addition to producing changes *in* students, the teacher will be called on to develop skills, attitudes, and values which will assist students to live and work productively in our constantly changing world and not be victimized by it.

What Should Students Be Taught?

Before examining the teacher's role in developing changes in students, it would be well to take a look at some of the basic skills, attitudes, values, and knowledges that students are likely to need in the future.

1. *The successful adult of the future will need to be creative.* Since society will be very different much more quickly than ever before, and will continue to change at an ever increasing rate, people must learn the skills of developing alternative behaviors and new ways of dealing with others, alternate ways of earning a living, and new ways of protecting themselves from an alien environment.

2. *The successful adult of tomorrow will need to be able to accept, and probably develop for himself, value systems different from those he presently holds.* One need only look at the differences between the behaviors of parents and children, between middle aged and young adults, and between ultraurban and rural families in order to recognize some of the radical discrepancies in values which mark our society and to get a feel for the conflicts engendered by these discrepancies. As a culture and as a nation we are becoming increasingly dependent on other nations and cultures of whose values we know relatively little. The entire world is becoming "smaller" and more interdependent. We have to learn how to deal effectively with all peoples of the world. In order to be able to develop new value systems and accept those that differ from our own, accordingly, we must come to a better understanding of the valuing process. We must learn how we acquired the values we hold and come to understand how and why others differ from us in the premises on which they base their own lives and behavior.

3. *The successful adult of the future will need skills of acquiring, processing, analyzing, and applying knowledge.* Since knowledge is increasing so rapidly and facts are becoming obsolete just as

fast, learning must be a continuous process. The adult of the future needs to know where to find necessary information. He or she will need to know how to analyze this information critically so as not to be deceived by error and misinformation. He will need to be able to sort out the most important and relevant from the superficial. Above all, he will need to be able to apply this new knowledge in the proper context. It is no longer enough to be able to recite a list of facts; they may already have become history.

4. *The successful adult of the future must be able to predict future events on the basis of currently available information.* Cervantes' theory of adaptational psychology, "forewarned is forearmed," has been supported by research on the reactions of astronauts, displaced families, and industrial workers. The mental processing of advance data about any subject cuts down the reaction time during the actual period of adaptation. But even more important is the habit of anticipating future events. "This conditioned ability to look ahead plays a key role in adaptation" (Toffler, 1970). No longer can we assume that the world will be the same 10 years from now, or that the skills learned yesterday will even be needed in the future. Examples of once valuable trades no longer in great demand because of improved technology are more than abundant. The availability, low cost, and increasing use of electronic calculators has reduced the need for employees who can add and subtract rapidly and accurately. Even the computer, that most drastic of change agents, now has a multigenerational life span, with more "generations" yet to come. All this means that people will have to develop the ability to make sound predictions of the consequences of present actions. The old saying that "history repeats itself" may still have a ring of truth, but we shall have to be trained to recognize it in new guises.

5. *The successful adult of the future must possess skills enabling him or her to relate effectively with others.* The turnover of people in our lives is constantly increasing, resulting in less time for trust to develop and friendships to become close. Thus, we need to develop ways to cut through the polite barriers to closeness and sharing, or else develop an acceptance of life with an absence of deep friendships. Carl Rogers (1969), in a description of what he calls the "New Man," lists as one of that man's most important characteristics the need for new forms of communication, verbal and nonverbal, feelingful and intellectual. Other traits are a recognition of this transient lifestyle as characterized by temporary relationships and an ability to leave behind close relationships without excessive conflict or mourning.

6. *The successful adult of the future must be able to avoid the disease so aptly named by Toffler "future shock."* The following are some of Toffler's own recommendations:

- Meet invention with invention; design new personal and social change regulators.
- Develop new principles for planning and pacing our own lives.
- Develop a new kind of education – in the future tense.
- Develop specific new technological aids to increase adaptivity.
- Develop new institutions and organizational forms at the societal level.
- Make conscious decisions to slow down the rate of turnover in our personal lives to the point at which we are most comfortable, i.e., maintain a few "stability zones."
- Consciously regulate technological advance.
- Test the effects of new technology on human lives before mass marketing it.

These are but a few of the skills that will be needed by the adult of tomorrow, and we will no doubt discover others of equal importance. However, we must try to do our best to predict what it is necessary to teach rather than continuing to teach what we have always taught simply because that's the way it's always been done.

What Is the Teacher's Role?

The teacher's role in preparing students for the future is surprisingly parallel to the behavioral style of the Community Change Educator in Richard Franklin's description of five community change agent styles (Gold, 1974). If a teacher assumes a role similar to this description, he or she will be assisting in the development, in students, of the skills and attitudes necessary for coping with not just the present, but with the future as well. And not just for coping with it, but for creating it.

Franklin describes four other styles – Instructor, Pater Familias, Advocate, and Servitor – that also parallel the behavior of teachers. He believes that the Community Change Educator is the most distinctive and effective of the five because of its effect on the client. It is also empirically grounded in the work of many psychologists, including Carl Rogers, and in the work of numerous educators concerned with teacher behavior. Franklin's description is much more effective than any paraphrase:

> What, briefly, are its distinctive marks? Central is concern by the Community Change Educator [teacher] on an inter-group plane, rather than on the individual as a medium of

change. Central, too, is helping those who comprise the client system [students] to learn the how and why of change or development. He takes initiative in generating a learning environment. Aims and means link together in this focus; substance and process, decisions and decision-making, people and problems, "soft" feelings and "hard" data all interpenetrate. Above all, human occupants of a social milieu are perceived as much more crucial to that environment than physical aspects or man-invented artifacts. Human interaction between the agent [teacher] and client [student] thus becomes highly emphasized, since the interaction is seen as paramount in a *partnership* to activate the problem solving process. The climate is one of openness to mutual change and influence.

This style is conceived in part from my and others' work as trainers of educators in community leadership and related types of experimental laboratories.... The Change Educator [teacher], for example, bears down on both cognitive and emotional data in the situation as relevant to the change process, relates collaboratively with the client [student], helps enlarge the number of options open, and perceives the decision for the change as the responsibility of the client [student] group. (p. 91)

He explains the change agent behavioral model and its subsequent effects using the diagram in Figure 2. The first continuum, A-B, represents the range of behaviors open to a change agent. Along the continuum is a potential range of mixes of behaviors that can change daily, or even hourly. An agent could display Pater Familias behavior (fatherly protection) one moment and move to Change Educator behavior (inviting open, free expression) the next. Although no change agent assumes one role at all times, the Instructor, Pater Familias, Advocate, and Servitor styles lean toward the left side of the scale, while the Change Educator tends to fall along the right half.

The vertical line represents the time dimension, anywhere from a few days to a few years. The second line, A'-B', represents the effect of the style of the change agent on the client, in this case, the student. Franklin contends that consistent behavior on the A end of the scale results in the client remaining dependent on the agent's help, while consistent behavior on the B end of the scale produces clients who are confident and willing to operate independently of the change agent. The clients will be problem solvers. The low control, freedom urging style of the Change Educator may at first panic

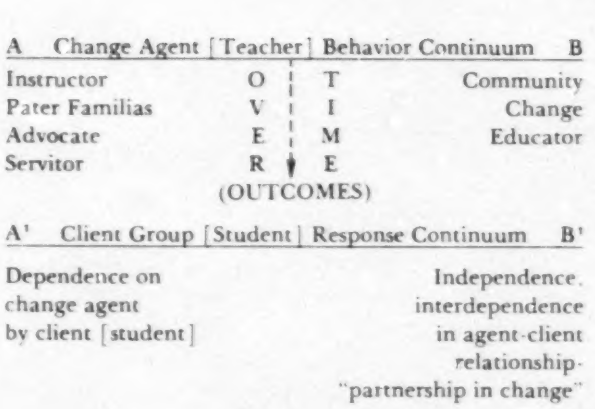

Figure 2. Change Agent Behavioral Model.

the client group, and may not work at all with some members. In educational settings this panic frequently can be observed in independent study programs for the gifted. When students who are accustomed to having their entire educational experience tightly directed from the front of the room are given the freedom to direct their own learning, they often wander aimlessly or balk at assuming responsibility for themselves. In such a situation a good teacher will assume a role pattern that gradually changes from authoritarian Instructor to low level control learning facilitator. Much value can be gained from the teacher being able to assume a variety of roles which are situation and context oriented and which relate directly to the needs of the students, rather than being tied to one role only.

Educational research has supported this theory in relation to the teacher's role in the classroom. Flanders (1960) found that there were four aspects of teacher behavior in the classroom which led to superior pupil achievement and attitudes. First, the teacher was capable of providing a range of roles from dominative supervision to discriminating support. Second, he or she was able to control his own spontaneous behavior and provide one or another role when he wished. Third, he had enough understanding of teacher influence so that he could decide between several alternative actions based on each situation. Fourth, and related to success in the third aspect, the more successful teacher could observe the situation objectively and sensitively, and diagnose it accurately.

A further description and analysis of the attitudes and actions of the Community Change Educator (CCE) may be helpful in terms of looking at the teacher's influence on students. Below are some extensive excerpts from Franklin's description:

> We might, to begin, propose that he is a blend of scientist/artist, in the non-technical

sense. Temperamentally, this may not be fully possible. Hypothetically, nonetheless, the scientist in the CCE strives to describe reality and "tell it like it is." He is able to sort fact from fancy. He puts value on experimenting. The artist in him, on the other hand, sees truth beyond the fact. He is creative, in that he discovers the new amidst the old, sees fresh mixes of familiar ingredients. He senses the potential as having validity equal with the pragmatic—in this case the potentiality of persons and groups to go beyond their current level of productivity or satisfaction. The Pater Familias or Advocate may prove to be artists. The Instructor can be the scientist. But I see the CCE as more likely to blend the experimental tradition of science with the creative tradition of the artist, and apply these to human relationships. His behavioral style will reflect the blend. He will exhibit detachment, yet his warmth will come through. Or is the word "caring"? His clients will sense his caring. They will come to know what he knows—their (potential for) growth in independence, their (latent) ability to choose wisely for themselves, their (budding) willingness to work in concert. (p. 97)

Empathy is a more congruent characteristic for the CCE. It encompasses strong, positive feeling for the client group, an understanding of client difficulties that surpasses words. Yet the CCE retains a delicate detachment from the group, a marginality that allows him to be with but not of. He is accepted as trustworthy in many groups—across social class, interest and ethnic boundaries. Yet a part of him stays uncommitted to the client-as-is, while committed to the client's capacity for development. (p. 98)

To establish a change environment, tension—however supportive—needs to prevail between the CCE's vision and values, and those of the client system. The helping relationship becomes an interaction between two perspectives, the base for stimulating a creative tension for change.

Such a style—marginal, empathic—is not calculated to gain blind devotion. It is apt to be high-risk behavior. The Change Educator retains his independence. He will not always meet client expectations. He may be seen at times as too progressive or uncooperative, or disloyal to the "Establishment." But to try to be close to a group, yet not pander to it or be its captive, is by nature risky. (p. 98)

The distinction: [between the Advocate and the CCE] a change agent with the Advocate style is committed to a problem and his fixed solution to it; the agent with the Change Educator style is committed to helping people learn to cope with the intricacies of group/community problem-solving and decision making: he is a *generalist* in terms of the problem, a *specialist* in terms of the process.

He is also an advocate of human growth, of healthy interdependence, of community wholeness. (p. 98)

He does not, as we've seen, "take over" the problem. His is much more of a diagnostic stance, an "exploring with" the client. This begins with the definition; defined and redefined through interaction. It continues through the analysis, the (creative) search for solutions, the (critical) testing of these options against situational reality and the ultimate goal. He does not choose for the group, nor does he implement the action decided upon. But he helps differentiate what the client needs to know throughout the process and helps the client obtain such knowledge or skill—including from himself. The CCE, better than client system members, is apt to understand the dynamics of the process. He can help them to examine these, to modify interpersonal blocks and to savor affective strengths, to utilize latent resources of experience and talent, to build in the norm of learning from examined experience. (p. 99)

His own gain is greater understanding of the helping relationship, plus the pleasure of seeing the client increase in stature. He and the client share a mutual adventure, from which they both grow. They become "partners in change." (p. 99)

Yet, I do not see him as the latest in a changing dynasty of saviors—religious, military, executive, scientific. He, perhaps, is starting a tradition of a different sort: without charisma, without salvation promised; but with a pledge to help people realize their potentialities, keep their dreams alive, expand their patience for the uncertain process of community living.... His only monument will be the more "competent community." (p. 105)

The Role and Responsibility of Teacher Training Programs

If teachers of the gifted are to be successful agents of change in classrooms and school systems, then teacher training programs must prepare them for this role. Through personal experience in working

with many teachers, the author has found that a significant proportion of teachers are resistant to changes in classrooms or schools in general. This phenomenon is not limited to those who are older, as some would argue. Young, first and second year teachers have been some of the most resistant to trying any new approaches – while some older teachers ready for retirement seem to be the most change minded.

This experience has been supported by research, particularly that conducted using the Myers-Briggs Type Indicator (MBTI), a personality inventory concerned with valuable differences in personality that result from the way people perceive and the way they judge. "We have two opposite ways in which we become aware of things – through the senses and through intuition. We also have two opposite ways of judging things – by thinking and by feeling. We use all these processes, but not equally" (Myers, 1970). Research studies on the use of the MBTI report high correlations of certain scales to such variables as creativity, autonomy, and need for change (Myers, 1962).

Von Fange (1962) found that in Canada, the intuitive types, especially ENFP* – the enthusiastic, persuasive innovating type – were highly rated as practice teachers but were seldom found in the public schools. A description from the manual (Myers, 1970) lists the following characteristics as typical of type ENFP: always seeing new possibilities, new ways of doing things, or quite new and fascinating things that might be done; being concerned with people and skillful in handling them; and being possessed of a good deal of impulsive energy for carrying out projects. The Canadian study also found that the types who tended to stay in teaching were the Judging types, particularly the Sensing-Judging types, the most fact oriented scheduled, organized types. A description from the manual (Myers, 1970) lists the following as among those characteristics usually possessed by these personality types who dislike new problems unless there are standard ways to solve them; like an established routine; enjoy using skills already learned rather than learning new ones; may not notice new things that need to be done; and tend to be satisfied once they reach a judgment on a thing, situation, or person. The Sensing-Judging types are a stabilizing influence on schools, but are the most difficult to change.

*ENFP is one of the possible 16 types derivable from the Myers-Briggs. Other types are derived by combination from the eight major classifications: (E)xtroversion; (I)ntroversion; (S)ensing-i(N)tuition; (F)eeling-(T)hinking; (P)erceiving-(J)udging.

Data from studies conducted at the Typology Laboratory at the University of Florida (McCaulley, 1971) are consistent with the Canadian findings: "Sensing-Judging types are in the majority in the public schools, and intuitive types are in the majority in the University's Laboratory school, in teachers coming for summer sessions in humanistic teaching, and in teachers moving toward non-teaching positions through graduate study."

The implications of these findings for training programs suggest three major alternatives: (a) teacher training programs could be more selective, choosing only those teachers who are accepting of change and willing to be innovative in their school systems and classrooms; (b) training programs could be designed to change attitudes toward a more open, flexible, and creative approach to teaching; or (c) training programs could be more concerned with what training is most productive for what persons and for what purposes – and then adapt methods and materials to reflect this concern.

Alternative 1

Although results of a four year study of gifted programs in Illinois (House, Kerins, & Steele, 1970) found that in the better programs, teachers were selected on the basis of whether they were change minded, this approach does not seem to be feasible at this time or fully justifiable. Additional research needs to be conducted confirming this method of selection if we are to accept it as viable. Teachers who are able to apply new ideas to the realities of classrooms, who are scheduled and organized, who are patient with routine details, and who are highly practical may be a necessary complement to opposite types. Furthermore, those in the field of gifted and talented education do not always have the luxury of selecting only those with the most potential for success. Many times we must begin with what we have and hope to develop a training program that will produce the kind of teachers we really want.

Alternatives 2 and 3

The best probable alternative for teacher training could be a combination of the last two presented. Even though a person's basic personality type cannot be changed entirely, certain attitudes and orientations toward situations can be changed. According to Kooyumjian (1969),

> The way in which a person perceives or becomes aware of the world about him and the way he makes judgments or comes to conclusions about what has been perceived are two processes which govern a large part of the

person's outer behavior. Perception determines what he sees in a situation and judgment determines what he decides to do about it. If a change occurs in the person's orientation to the world, the way a person perceives the world, makes judgments about it, or the extent to which he relies on his perception or judgment, one might consider this to be a change in attitude. (p. 53)

In a study concerned with attitude changes in inservice training programs, Kooyumjian (1969) found that significant changes in attitude were found in all of the nine workshop groups and that in all but one, these were changes toward characteristics of openness to change, flexibility, creativity, adaptability, and autonomy. The one workshop showed changes in the Introversion-Extroversion scale, which does not seem to have implications for this research. A person who retains certain characteristics and yet develops an openness to change and flexibility will be a valuable asset in a school system. If we are concerned about a balance, we must remember that at present, the majority of teachers are resistant to change. Often the enthusiasm and innovativeness of some teachers is overpowered by the "stability" of most of the teachers.

In order to accomplish meaningful attitude changes and to train teachers for the variety of situations they will encounter, training programs must be more concerned with the kind of program that is most effective for certain persons – and what the final purpose is to be. In the same study Kooyumjian analyzed the differences between achievers and nonachievers in content learning in the nine workshop groups. She found that the Sensing-Intuition scale of the MBTI differentiated between the two groups and concluded that rather than determining who learns in the workshop, the personality variables predicted who would operate successfully in a training experience which tended to be open ended and unstructured (since all the content learning in the workshops was to be gained through independent study). Steele (1968) concluded from studies of human relations laboratories that the same scale of the MBTI could be used to provide a wider range of training experiences suited to different types of individuals. If we as educators believe that children are different and require different programs and techniques, then we also must accept the idea that adult learners are also unique.

Certain questions must be confronted and answered before teacher education programs will be able to determine their success or failure and effectively train teachers who will prepare gifted children for successful adult lives. There are three basic questions and certain subquestions that should be helpful in designing effective teacher education programs:

1. *What, if any, personal characteristics must be possessed by those who are accepted into the training program?*

Are there certain characteristics of a person which cannot be changed? If so, do they hinder his or her potential to be a successful teacher of the gifted and talented? And if so, what are these characteristics?

Is the need so great that we must accept all who are interested in teaching the gifted and talented?

Should we make a compromise between the two opposing points of view and set priorities – accepting first those who meet certain minimum criteria, and if the program is not filled, accept enough others to fill our needs? Should we accept those who show the most promise of being successful and concentrate our energies on them?

2. *What, if any, basic knowledge, skills, and or attitudes should be possessed by all teachers of the gifted and talented in order to enable them to be successful?*

What is the program designed to produce in the end?

Are there certain basics a teacher of the gifted and talented must be able to do or know in order to be successful, or does the type of program or subgroup of gifted and talented children to be served determine the most needed characteristics?

Are there unique *combinations* of characteristics that are more important than any of the characteristics in isolation?

3. *If certain changes are necessary in the teacher, given a realistic appraisal of the situation and the nature of the learner, what is the most effective way to accomplish these changes?*

What is the situation? Do we have a year or two, a few weeks, or a couple of months? What are our resources, both human and fiscal? Do we have available programs for observation and practice?

What are the teachers like? Are they experienced? Have they worked with gifted and talented children before? How do they best learn?

In a local school district, should we develop an inservice program? Should we pressure a nearby college or university into offering a course or courses on the education of the gifted and talented?

At the college or university level, should we require all preservice elementary and secondary teachers-to-be to take a course or sequence of courses in gifted and talented education? Should we offer an undergraduate or a graduate major? In which department? Should all education courses be required to include sections dealing with provisions for gifted and talented children? What other creative alternatives or combinations can we design?

The remainder of this book examines past and present practices, existing literature, and the findings of research in order to assist those concerned with education of teachers of the gifted in answering these basic questions in relation to their individual situations. The first section deals mainly with the first two questions in light of existing research and professional literature, while the last two sections deal mainly with the third question in light of existing practices and the evaluation of these practices. Conclusions and recommendations at the end of each section are devoted to specific recommendations, based on assumptions set forth at the outset of the book.

Teacher Characteristics

IN THE examination of teacher characteristics that follows, the first two questions set forth above provide the context for a presentation of what literature has to say. As we will see, there is by no means unanimity. While the presentation offered here is not intended to be exhaustive or to provide answers to all the questions, it hopefully will provide the reader with an occasion for examining his or her own perspectives in a somewhat different light, as well as offering an opportunity to explore the advantages and disadvantages of alternative teacher training methods.

Personal Characteristics

As Gold (1974b) states, discussion related to teacher training programs often centers on "exiting" versus "entering" characteristics. "Entering" characteristics are those which a teacher or prospective teacher should possess before beginning the training program, while "exiting" characteristics include those traits already possessed, combined with new knowledges, skills, and attitudes that make up the substance of the training program. The program may also be designed to eliminate or modify undesirable "entering" characteristics.

If one has a choice in developing training programs, a logical procedure would be to select those who show the most promise of becoming successful teachers of the gifted and talented. A central consideration, too, is the possibility that certain characteristics *must* be present, i.e., minimum requirements must be met by the trainee.

Educators have been enumerating desirable characteristics of teachers of the gifted and talented for many years. These listings, which are prone to include all the virtues of mankind, generally include the following:

- Highly intelligent.
- Flexible and creative.
- Self confident.
- Wide variety of interests.
- A sense of humor.
- Fairness, firmness, patience.
- Sympathy with the problems of gifted and talented children.
- Clear self understanding and understanding of the teacher's role.
- Willingness to devote extra time and effort to teaching.
- Enthusiasm about teaching and the subject matter.
- Willingness to be a facilitator rather than a "director of learning."
- Love of learning and desire to continue learning.
- Enjoyment in working with gifted and talented children.

(Abraham, 1958; Bishop, 1968; Brandwein, 1955; Delp & Stanley, n.d.; Erhardt, 1964; Gallagher, 1959, 1975; Gold, 1974b; Havighurst, 1958; Hildreth, 1966; Iowa State Department of Public Instruction, 1969; Magary & Freehill, 1972; Marland, 1971; Martinson, Delp, & Wiener, 1966; North Central Association of Colleges and Secondary Schools, 1974; Rice, 1970; Suchman & Carleson, 1968; Wiener, 1960).

Even though all these traits are seen as desirable in teachers of the gifted and talented, they are generally characteristics of all good teachers. Assuming that these *are* necessary characteristics, where does one find such a person? We are thrown back on the problem of identifying some traits that are absolute necessities in teachers of the gifted and talented, or on simply selecting the best teachers to teach them. Another possibility, however, is that there is a unique *combination* of traits that enables a person to be a successful teacher of this group of children.

Many researchers and leaders in the field seem to agree that there is at least one necessary characteristic—a high degree of intelligence—and recommend most strongly that teachers selected should possess significantly above the average intelligence. Reasons cited for this point of view center on the argument that a teacher must be knowledgeable about the subject matter being taught, and that he or she must be able to keep up intellectually with

the students (Bishop, 1968; Brandwein, 1955; Delp & Stanley, n.d.; Gallagher, 1959; Gold, 1974b; Magary & Freehill, 1972; Martinson et al., 1966; Rice, 1970; Wiener, 1960). Others, however, disagree with this point of view and have presented arguments to the contrary. Most of the dissenters seem to agree with Sandberg (1963), who believes that in teachers, an unusual ability to *teach* is much more important than an unusual ability to learn in academic situations.

In at least two significant studies, any mention of intelligence is notably lacking (Erhardt, 1964; Suchman, 1968). Indeed, the argument can be advanced that there is a point at which intelligence becomes a negative factor. A teacher must be able to communicate with students at their level of understanding, and many outright geniuses (Einstein serves as a convenient example) have had great difficulty in communicating with those of inferior intelligence or intellectual development. It is also entirely possible that the only teachers who are willing to work with gifted and talented children are those who are themselves highly intelligent. At this point, self selection becomes an important factor.

The second most strongly recommended characteristics are closely related: emotional maturity and a strong self concept (Brandwein, 1955; Delp & Stanley, n.d.; Gallagher, 1975; Gold, 1974b; Hildreth, 1966; Magary & Freehill, 1972; Martinson et al., 1966; Wiener, 1960). Often the second characteristic is closely related to the first; a person who is intelligent and successful in academic and other endeavors often has a positive self concept.

There seems to be no significant opposition to these latter characteristics, even though they are not mentioned as often as intelligence. Most writers seem to agree that a teacher of the gifted and talented must have sufficient ego strength to deal effectively with students who may correct pronunciations, may know more about a particular subject than the teacher, may ridicule the teacher, and may be able to learn faster than the teacher. A less secure person may become defensive, autocratic, and (intentionally or unintentionally) hostile toward students who are perceived as posing a threat to his or her stature as "leader" in the classroom.

Recent research on the relationship between teacher creativity and teacher effectiveness adds a different dimension to the problem of teacher characteristics (Yamamoto, 1965). Although the subject has not been explored in depth, there is reason to believe that a positive correlation exists between creative thinking abilities and teacher effectiveness. This belief results from certain studies dealing with types of thinking in teachers, as well as from studies which treat teacher-pupil interaction patterns (Knoell, 1953; Torrance, 1960; Yamamoto, 1963). A problem that causes difficulty in research in this area is the apparent inability to separate comparisons of creative teachers from discussions of teachers who use techniques to engender creativity in their students. In other words, a teacher may be creative and still teach in ways that discourage rather than encourage creativity in students. The research done for this book did not uncover research designed to assess the effect of creative teachers on the development of gifted and talented students, although numerous studies have been conducted dealing with the effects of using various teaching techniques designed to enhance creativity.

A related area of research which has been developing more recently has examined the effect of teacher personality types on children in their classes. While it may seem axiomatic, it is good to remember that persons with different personality types or traits are interested in different fields, are good at different things, and often find it hard to communicate. People with opposing preferences tend to oppose each other in many ways and possess unique strengths and weaknesses (Myers, 1970). McCaulley (1971) reports that differences in intelligence, creativity, and academic achievement have been found among different personality types. Quoting some of the more relevant results, again related to the Meyers-Briggs Inventory:

> Intuitive types, who have a greater facility for dealing with abstractions and symbols, score higher than Sensing types on intelligence tests, college boards, and similar examinations. It appears that the Sensing types, whose intelligence is more in the deed itself than in the words about the deed, are undervalued at all levels by our commonly-used assessment instruments.
>
> The Intuitive types, with their perception of possibilities and their natural interest in the imaginative, the abstract, and the theoretical, are in the majority in samples of "gifted" or "creative" persons. [From the Manual: Intuitive types were 79% of gifted 7-9th grade males; 88% of females; 83% of National Merit Finalists; 97% of MacKinnon's creative men and 96% of his creative women.]
>
> Perceptive types, with their greater curiosity and openness, appear to pick up more information and in many studies score a little higher in intelligence that the comparable Judging types.
>
> Judging types, with their more planful, organized attitude toward life, in most studies

> show higher academic achievement than the comparable Perceptive types . . . . Perceptive types are more likely to be "underachievers," and Judging types to be "overachievers." (p.3)

Certain personality types also consistently choose certain professions:

> Feeling types, who prefer to judge on the basis of personal values, are found most frequently in the "helping professions," teaching, nursing, medical practice in those fields which have the most active patient care, social sciences, religion, and the liberal arts.
>
> Every school, every department within a school, and every curriculum in a department can be expected to have its own characteristic type distribution, with some types over-represented and other types under-represented. (p.2)
>
> As in student populations, there are more Sensing types among teachers in the lower grades, a somewhat higher proportion of Intuitive types teaching in high schools, and a majority of intuitive types (about 75%) among college teachers. (p.4)

An important implication of these findings for teacher training is that gifted (especially creatively gifted) students are "not only in the minority with their peers, but also are most frequently taught by Sensing teachers whose step-by-step approach bores them" (p. 5). In a recent pilot study, Sensing teachers reported disliking the qualities of the Intuitive mind. According to McCaulley, "it is unlikely . . . that teachers who not only do not understand, but do not like the working of the Intuitive mind will be best able to help it develop its full potential" (p. 5).

Knowledge, Skills, and Attitudes

Although we may wish for a neat, clean division of characteristics into "entering" and "exiting," and may wish to select a target population with the greatest potential to become successful teachers, many of the previously listed traits can be acquired through the training process itself. As one learns more about the characteristics, concerns, and teaching methods related to gifted and talented children, one often develops a sincere desire to help them (Martinson et al., 1961; Rothney & Sanborn, 1968; Wiener, 1960). As one becomes knowledgeable about content and methods for teaching gifted and talented children, one often becomes more secure and develops a strong concept of him/herself as a teacher. Good training programs can also change attitudes that may be considered as part of an individual's personality structure. Teacher self selection again enters at this point. It is possible that those who recognize the problems of the gifted and talented children in our midst, and who want to teach them, *are* intellectually superior.

According to recent research (Bishop, 1968; Delp & Stanley, n.d.; Erhardt, 1964; Gallagher, 1959; Gallagher & Aschner, 1967; Havighurst, 1958; Iowa State Department of Public Instruction, 1969; Magary & Freehill, 1972; Martinson et al., 1966; Rice, 1970; Suchman, 1968) the desirable "exiting" knowledges, skills, and attitudes most often listed are:

- Extensive knowledge of the subject being taught and of related fields.
- Understanding of human development.
- Skill in developing a flexible, individualized curriculum.
- Demonstrated innovative approaches to teaching.
- Utilization of teaching strategies that engage children in the higher orders of intellectual activity.
- Student centeredness.
- Demonstrated teaching ability in the regular classroom.
- Ability to admit mistakes.
- Willingness to be a guide rather than a dictator, allowing students to develop independence.

That these are desirable characteristics in all teachers is essentially agreed. But these writers go further, maintaining that even though these knowledges, skills, and attitudes are desirable in all teachers, they are absolutely necessary in teachers of the gifted and talented.

Some of the more significant work in recent years in the area of knowledges, skills, and attitudes necessary for successful teaching has used a different approach, namely the analysis of teacher-pupil interaction patterns. This method involves the assessment of immediate behavior rather than long range changes in achievement or performances on a test. The most significant of this research in regard to education of the gifted and talented was conducted by Gallagher, Aschner, and Janné (1964). In this study the authors found that the types of questions asked by teachers determined the kinds of thought processes elicited from the students. All teachers had been rated as superior instructors, and all teachers at some time or other asked questions in each of the four categories measured. Cognitive memory questions made up 50% or more of the questions; convergent thinking was the second most frequent category utilized; a much smaller proportion of divergent and evaluative thinking was elicited by teacher questions.

Two implications of this study are significant for our discussion here. First, gifted students are already competent in the use of cognitive memory processes and are often bored with endless questions testing this ability. Second, gifted students (perhaps even more than average students) need to develop skills of divergent and evaluative thinking if they are to make the best use of their capabilities in a world where the mere possession of information is losing importance while the skill of processing and analyzing that information is gaining increasing significance. Although all the teachers connected with this study were rated superior, the overabundance of cognitive memory questions in their interaction with pupils points to the need for further analysis and change of teacher questioning behavior in relation to gifted and talented students. It is perhaps worth more than passing interest that the most revered of teaching techniques, the Socratic method, focuses not at all on information recall but on these higher cognitive processes.

In preservice as well as inservice situations, teachers *can* be taught to ask questions on different levels. They can also be taught to analyze their own classroom performance in terms of the kind of thinking exhibited by students. They easily can compare ideal and real conditions in self assessment situations. Numerous teacher training programs already have utilized this approach with success.

A Need for Training

In some cases teachers are hostile toward the gifted and feel that no special provisions need to be made for them, since these children will "make it on their own" (North Central Association of Colleges and Secondary Schools, 1964; Rothney & Sanborn, 1968; Sr. Josephina, 1961; Wiener, 1960). Studies show that experience with programs as well as teacher preparation produce more positive attitudes toward special programs for the gifted.

"Successful Teachers of the Gifted?"

Leaders in the field of gifted and talented education generally agree that differing kinds or types of giftedness exist, and that youngsters in each subgroup possess more common characteristics than the entire population of "the gifted and talented." Numerous subgroups are listed in the literature. Some writers only consider two groups—high achievers and low achievers. Others consider youngsters to be gifted and/or talented in the areas of communication, planning, academics, creativity, and decision making. Still others include those who are gifted and talented in certain areas of human endeavor—art, music, drama, dance, and athletics. The most widely accepted listing of types of talent appears in the definition of the gifted and talented offered in the report of US Commissioner of Education Sidney Marland in the US Office of Education *Report to the Congress of the United States* (1971):

> Gifted and Talented children are those identified by professionally qualified persons who, by virtue of outstanding abilities, are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society.
>
> Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination:
>
> 1. general intellectual ability
> 2. specific academic aptitude
> 3. creative or productive thinking
> 4. leadership ability
> 5. visual and performing arts
> 6. psychomotor ability. (p.2)

Probably the most researched subgroups in terms of comparison of gifted and talented have been general intellectual ability and creative and divergent thinking. A comparative summary of some of the differing characteristics would include:

High Creativity	*High Intellectual Ability (IQ)*
1. Experiences psychological isolation and estrangement from peers.	1. Is generally accepted by peers, often as a leader.
2. Has many unconventional career choices.	2. Usually has conventional career choices.
3. Is more concerned about own values than the values of the group or society.	3. Is concerned about the values of society.
4. Desires personality characteristics opposite to those he perceives as favored by teachers.	4. Generally desires personality characteristics favored by teachers.

These characteristics (Gowan, Demos, & Torrance, 1967; Torrance, 1972b) have implications for the teacher, as in the case of the highly creative student who has little or even negative desire to

emulate the teacher and win teacher approval.

In other subgroups of gifted and talented children, significant differences are also apparent. For example, culturally different youngsters do not hold the same values as do their teachers, especially if they are not of the same culture or social class as the students. High achievers and low achievers behave much differently in the classroom and have great divergencies in motivation.

What does all this mean? It means that we must stop considering one group of "The Gifted" for purposes of identification, teacher training, and programing. We must stop paying mere lip service to the idea of multiple talents. We must consider the unique qualities of students. If students must be grouped in some way for programing purposes, let's break the group of "gifted" students into more meaningful, manageable, and describable subgroups.

Few researchers have considered teacher qualifications for subgroups of gifted students. In fact, all of the studies cited which utilized the method of asking gifted students to identify successful teachers had questioned only one subgroup of gifted students—the academically talented high producer. Gallagher (1975) was among the first writers to consider subgroups. He separates the gifted into high producing and low producing, and lists combinations of characteristics that are important for teachers of each group. He feels that teachers of high achievers need extensive knowledge of content in at least three of the major areas of science, mathematics, social studies, and language arts; knowledge about gifted children; knowledge about methods of stimulating productive thinking; and supervised practice in working with the gifted. He believes that teachers of low producing gifted children need an understanding of advanced curriculum and pedagogy, an intensive knowledge of children with special motivational problems, an understanding of the social background of the culturally deprived, the ability to encourage a desire to learn in children, and the ability to work with groups of culturally deprived or motivationally handicapped children.

Another significant writer to consider subgroups of gifted children has been E. Paul Torrance, who has directed some of the most significant research in the area of the creatively gifted. He and others have found that certain teaching methods *do* develop and enhance creativity in students. Highly creative students who had not been successful in school made meaningful positive changes in behavior as well as in achievement. In one survey, Torrance (Gowan et al., 1967) found that the most frequently mentioned changes were:

- A student progresses from nonreader to an average or superior reader (usually accompanied by improved behavior and achievement in general).
- A student moves from vandalism, destructiveness, and lack of school achievement to constructive behavior and improved school achievement.
- A student changes from emotionally disturbed and unproductive behavior to productive behavior and even outstanding school achievement.

The list is much longer, but the point is that in this and many other instances, gifted students begin to realize creative potential (as measured by significant changes on posttests measuring creativity) and also change in other positive ways when teachers use certain methods and possess certain attitudes toward children.

Several writers and researchers have considered the subject of methods for teaching the creatively gifted child. Skills and attitudes that have been found to produce the positive changes listed above include the following list as well as other similar and related techniques:

- Encouraging and permitting self initiated learning.
- Supporting the students against peer pressure to conform.
- Providing a warm, safe, and permissive atmosphere.
- Respecting and encouraging in other children respect for imaginative ideas.
- Showing pupils that their ideas have value.
- Having pupils do some things without the threat of evaluation.

In addition to making teachers aware during their training of the effects of their teaching methods on creative children and developing in teachers more acceptable ways of dealing with these children, we must again consider those "entering" characteristics (or attitudes and values) the teachers already possess. Some teachers just do not seem to be able to apply the techniques listed above. Torrance believes that

> There are a number of personality traits which daily prevent teachers from being receptive to theories about encouraging young people to be imaginative or to trust themselves, and these traits are closely associated with the values which many teachers have. (Gowan et al., 1967, p. 161)

At least 10 characteristics were found to be present among teachers who could not apply one or more of the principles advocated by Torrance for

encouraging creativity (p. 162): authoritarian, defensive, dominated by time, insensitivity to pupil emotional and intellectual need, lacking in energy, preoccupied with information giving functions, intellectually inert, disinterested in promoting initiative and self reliance among their pupils, preoccupied with disciplinary matters, and unwillingness to give of self.

The values which this group held in high regard seem even more significant in understanding their behavior, as well as in understanding the behavior of others in similar situations (pp. 162-63): time (but not timeliness), orderliness (but not necessarily logical thinking), respect for authority (but not respect for the potentialities of the individual), student responsibility to class and teacher (but not the reverse), preservation of self image (but not the enhancement of the pupils' self image), and importance of information (but not of information getting skills).

Teacher training programs may need to be designed either to eliminate certain prior behaviors and attitudes or be concerned with selecting only those candidates who do not possess the undesirable values and resulting behaviors. In the latter case we would be returning to the position of selecting only those teacher trainees with the greatest potential to succeed as teachers of the gifted.

Different Teachers for Different Program Types?

Few, if any, teacher training programs prepare a teacher to deal adequately with a variety of program models, and few, if any, program administrators consider the special abilities of teachers when deciding on program types to be implemented. Hildreth (1966) addresses this subject:

> Somewhat different skills are required in class management when the gifted are taught as a cluster group or as individuals in the regular classroom, rather than in a separate class composed of highly gifted children. The teacher who knows how to make the best use of specialists in such fields as mathematics, foreign languages, the arts and crafts, and other areas is prepared to give talented students a richer learning experience. (p. 531)

Some teachers of the gifted and talented who responded to a survey of teacher reactions to certification procedures in Georgia listed as needed additions to the teacher training program they had undergone: training in public relations, inservice training skills, speaking skills, and other areas related to the communication process between the public and the school (Bruch & Walker, 1973).

A teacher who only sees children once or twice a week in an itinerant situation will need quite different skills from those teachers who spend entire days, weeks, and terms with classes of gifted students. The itinerant teacher will need to be able to motivate students to the point that they will be able to continue to work on projects enthusiastically even though his or her visits are infrequent. Itinerant teachers, like continuing teachers, need special experience and skills which will enable them to work closely with other teachers. In these situations the major part of student time will be taken up in regular classroom instruction. But if the regular classroom teacher does not modify his or her own methods or permit carryover experiences, if he does not integrate the continuing with the intermittent in cooperation with his itinerant colleague, special programs will not be nearly as effective. Regrettably, while research attention has been given to assessing differing teacher characteristics among regular and itinerant classroom teachers in other areas of exceptionality, the same has not been done in relation to programs for the gifted and talented. Experience would seem to bear out the hypothesis, however, that preservice and inservice attention to these communication skills would serve the cause of the experiential integration of gifted and talented students well.

Summary and Recommendations

There is general agreement in the literature on certain "entering" and "exiting" characteristics desirable for teachers of the gifted. These characteristics are often deemed essential. But while these listings of characteristics can serve as guides for the development of teacher training programs, both preservice and inservice, certain caution must be exercised. Generally, these lists have been devised by one of four methods:

1. By gifted and talented students, who would either identify traits they felt were necessary in successful teachers or who would identify teachers they felt were successful. In the latter case, these teachers would then be interviewed and tested for purposes of identifying common characteristics.
2. By other educators, usually teachers or administrators, who either identified characteristics of a successful teacher or identified successful teachers who could be interviewed (as in number 1 above.)
3. By the amount and kind of changes effected by a teacher in students, i.e., a teacher who produced certain changes deemed desirable in students was interviewed to determine his or her characteristics.

4. By the author of the study, speaking from personal experience, who would list certain characteristics deemed important to the teaching of gifted and talented students.

The first two methods used only students and teachers involved in programs for the intellectually and academically gifted.

Criteria for Accepting Candidates

It is recommended that colleges *establish minimum criteria for candidates accepted into a training program for educators of the gifted*. There are certain characteristics that increase a teacher's potential for success in teaching gifted children, especially as these characteristics relate to particular subgroups of the gifted. One of the most significant reasons for the lack of quality in education is the absence of minimum standards for teachers. At one time, the demand for teachers was so great that almost anyone who wanted to teach could complete the training and get a job. Now there is enough of a surplus to allow more quality control. Two criteria which are necessary "entering" characteristics for teachers of all subgroups of the gifted are *an ability to relate effectively to the particular group of youngsters one is planning to teach and an openness to change*.

The most perfect person in other respects would fail miserably as a teacher if he or she could not communicate with the students. Although the characteristics of "relating" to one's students may not be measurable by objective tests, and we are not sure how much is learned from experience, teacher behavior certainly is observable. A candidate can be placed in a real or simulated situation and watched!

The second characteristic, openness to change, is necessary since most programs for the gifted involve the use of teaching techniques different from those utilized with other students. A teacher must be able to develop these new competencies and to continue his or her development as the needs of students continue to change. Even though attitudes toward change can be modified by the training program, a complete change in attitude is seldom accomplished.

It is recommended that colleges *establish minimum criteria for candidates "graduating" from a training program for teachers of the gifted*. There are certain knowledges, skills, and attitudes that increase a teacher's potential for success in teaching gifted students, especially as they relate to particular subgroups: (a) knowledge of the basic characteristics and needs of children possessing a particular talent; (b) skill in and willingness to be a guide rather than a dictator; (c) skill in and willingness to utilize techniques of individualizing instruction, including methods and instruments for identification and diagnosis, methods and materials for programing and planning activities, and methods and instruments for evaluation based on the mental, physical, emotional, and social needs of the students; and (d) the ability and willingness to assume a variety of roles while teaching.

Additional Criteria Depending on Gifted Subgroup

It is recommended that additional *minimum "entering" and "exiting" criteria should be related to the subgroup of gifted children the candidate is most likely to teach*. Although the literature strongly supports the need for such characteristics as a high degree of intelligence, self confidence, and emotional stability, these conclusions were reached by studying situations involving only two very similar subgroups of gifted students (those with general intellectual ability and specific academic aptitude) who were also high producers. It seems that it is more important for teachers of creative children to exhibit attitudes and skills such as teacher support against peer pressure to conform, provision of a warm, safe and permissive atmosphere, and values such as respect for the potentialities of the individual, the teacher's responsibility to the child, and the enhancement of pupils' self images. For teachers concerned with low producers, skills such as ability to encourage a desire to learn in children, and an understanding of the social background of the culturally different are more important than knowledge of content and methods for stimulating productive thinking.

It must be understood that the above characteristics would be important in all good teachers, but where does one find a super teacher who can be all things to all people? The reality of the situation is that we must accept teachers who can be really good at teaching a certain group, and realize that it is impossible to find "perfect" teachers for all gifted programs. Certain characteristics are *more* important for one group than another even though all are desirable traits.

A significant literature is available dealing with teachers for intellectually, academically, and creatively gifted students, but in the areas of leadership, talent in the visual and performing arts, and psychomotor abilities, literature about teaching the gifted is relatively nonexistent. It is entirely possible that many characteristics listed as important to teachers of intellectually and academically gifted children will be necessary in teachers of students gifted in the other three areas. Many children with other talents are also intellectually gifted. On the other hand, it is also possible that characteristics listed for teachers of creative children will be more important, especially in the area

of visual and performing arts. In addition, completely different traits may emerge as more highly desirable for teachers of students in these unexplored areas.

"Entering" Criteria for Teachers of Intellectually Gifted

It is recommended that *in addition to the general characteristics listed, "entering" criteria most appropriate for teachers of students gifted in general intellectual abilities and specific academic aptitude are: a high degree of intelligence and self confidence/emotional stability.*

Intelligence. It must be understood that the first requirement does not imply that a teacher of the intellectually or academically gifted must be intellectually gifted, but should be intelligent enough to "keep up" with the needs of the students.

Self confidence/emotional stability. A positive self concept is difficult to develop in a person as mature as a prospective teacher, so unless there is a strong possibility that the training program can develop positive self concepts, this trait should be a prerequisite. A teacher who is not secure in his or her own ability will become hostile toward students who threaten his stature.

"Exiting" Criteria/Intellectually Gifted

It is recommended that *in addition to the general characteristics listed, the following must be among the "exiting" criteria for teachers of students gifted in general intellectual abilities and specific academic aptitude: skill in and willingness to utilize questioning techniques and teaching methods that develop higher thought processes in gifted students; extensive knowledge of basic concepts in the subject being taught as well as related fields; and knowledge of media and materials particularly useful in his area of teaching.*

"Entering" Criteria/Creatively Gifted

It is recommended that *in addition to the general characteristics listed, "entering" criteria most appropriate for teachers of the creatively gifted are a high regard for imaginative ideas, a respect for the potentialities of the individual, a high regard for the teacher's responsibility to the child and the group's responsibility to the child, and a belief in the importance of enhancing pupils' self images.*

High regard for imaginative ideas. A teacher who does not place high value on divergent ideas will tend to squelch the creative abilities of students, and will encourage them to respond to tasks with "acceptable" or "right" answers. On the other hand, a teacher who values divergent and imaginative ideas will encourage students to respond to tasks with unique answers, thus reinforcing their talent.

Respect for the potentialities of the individual. A teacher who respects the potential of the individual will be supportive of the unique aspects of each person and support him, where appropriate, against peer and societal pressure to conform. Such a teacher will assist the child in critically evaluating his own work rather than always accepting an outsider's opinion.

High regard for the teacher and the group's responsibility to the child. If the teacher believes in the importance of teacher and group responsibility to the child, he will be concerned about developing the child's talents, whatever they may be, even if these talents are not valuable to the group's functioning or to the teacher's image. For example, when a child's divergent ideas become disruptive to a group's effective functioning, a teacher who believes in the group's responsibility to the child will allow the student to express himself or find other outlets for his talents rather than "putting him down" for his lack of attention to the task of the group.

Belief in the importance of enhancing a pupil's self image. A positive self concept and belief in one's own talents are necessary for withstanding the onslaught of criticism that occurs when new ideas are introduced. A teacher who believes in *honestly* enhancing pupils' self images will give positive reinforcement to divergent ideas and will encourage the same attitude in other students, thus increasing a student's tendency to produce creative ideas. Such a teacher will also be able to give constructive criticism when necessary and appropriate (during evaluation rather than production of ideas).

We emphasize again that while all these are characteristics that are important in teachers of all gifted children, they are absolutely essential traits for teaching the creatively gifted.

"Exiting" Criteria/Creatively Gifted

It is recommended that *in addition to the general criteria listed, "exiting" criteria most appropriate for teachers of the creatively gifted are: skill in and willingness to provide a warm, safe, and permissive atmosphere for learning; skill in and willingness to utilize teaching techniques that further develop all aspects of creativity (fluency, flexibility, elaboration, and originality) through all subject areas; and skill in and willingness to teach a creative problem solving process, involving such aspects as defining a problem, brainstorming possible solutions, evaluating the solutions in terms of factors surrounding the whole situation, and "selling" the solution.*

Attracting Intuitive Personalities

It is recommended that colleges *attract more intuitive personality type teachers into the field of gifted education*. Since most gifted and creative people are intuitive personality types, and most teachers are the opposite (Sensing types), we need more teachers who understand and can develop intuitive minds. More research needs to be done in this area before suggesting that an intuitive personality is a definite requirement for teachers of the gifted. Studies so far have indicated that even though teachers best understand students with personality types similar to their own, many teachers can learn to deal more effectively with all students if they understand personality types and their effects on learning styles.

Assessing Competency

It is recommended that *in order to assess a teacher or prospective teacher's competency in the areas listed above, the teacher trainer or employer must use a variety of techniques in addition to traditional methods of interviewing and reviewing transcripts and recommendations*. Some more specific suggestions are the following:

- Put the candidate in a real situation with students to be taught, and observe. Solicit evaluations of the teacher's performance from students, other teachers, administrators, parents, and other appropriate persons. The period of time spent in the classroom should give sufficient time to allow the candidate to establish rapport and overcome nervousness before observation and rating. Have *specific* behaviors to watch for.
- Utilize various personality and attitudinal inventories to assess personal characteristics.
- Have other teachers, students, and school personnel devise checklists or other locally developed measures to determine characteristics important in this unique situation.
- Utilize value clarification techniques to determine those principles held in high regard by the teacher. These techniques are particularly necessary in determining the characteristics listed as "entering" criteria for the creatively gifted. For example, a ***rank order*** activity would require a teacher to rank in order of preference three characteristics he or she feels are most important to develop in gifted students: responsibility, a desire to learn, or a positive self concept. The candidate then must explain why he chose a particular order. Other rank orders could involve characteristics important in adults or teachers, teaching techniques to be used, morals to be taught, values to be taught, and other issues deemed important in teaching success.
- Have gifted students interview the candidate.
- Have parents interview the candidate.
- Have other teachers interview the candidate.

It must be emphasized that a variety of techniques for evaluating the prospective teacher should be utilized in order to obtain a more accurate picture of the total person. Probably the most effective single procedure of all the methods listed above is the first. In addition to giving the employer a more accurate idea of the ability of the teacher, it gives the prospective teacher an indication of whether or not he or she will be satisfied teaching in this particular situation.

Preservice Training

IN ITS STRICTEST sense, preservice training means the training of undergraduates, those who will be the teachers of the future. For the purposes of this book, however, preservice training means teacher training specifically designed to train teachers who have not been, nor are presently, engaged in teaching programs for gifted and talented youngsters. The reason for this interpretation is that most university based programs for teachers of the gifted and talented may include both graduate and undergraduate students. They also may include both experienced and inexperienced teachers of the gifted and talented, even though their main purpose is to train those who have not yet had specialized preparation.

Programs

An attempt was made to locate various models utilized in the preservice training of teachers of the gifted and talented. Various programs were examined, and although there were variations in methods used, in most cases the training consisted of a sequence of courses leading to a Bachelor's, Master's, or Doctoral degree in the education of the gifted and talented. In light of this fact, the following section presents an analysis of these programs and a comparison of the major methodological differences in them, as well as a review of past and current practices. Readers should consult Appendix A for a listing of colleges and universities offering degree programs in gifted and talented education.

Opportunities and Trends

Periodically, surveys are conducted to determine which institutions of higher education offer courses and degree programs in gifted and talented education (The Association for the Gifted, 1974; French, in Hildreth, 1966; Laird & Kowalski, 1972; and Shaffer & Troutt, 1970). Institutions, courses, and instructors are changing constantly, but certain constants seem to remain. One of the most important has been a steady increase in opportunities available, both in the number of courses offered and in the number of institutions offering training. For example, French reports that only four institutions offered four or more courses, while the 1974 survey, which is only a partial listing, shows 11 universities that have degree programs at the Bachelor's, Master's, and Doctoral levels specifically in gifted education. A much larger number have one or more courses dealing specifically with the gifted.

Other trends that seem to have continued are the following:

1. States with established programs and support from the state level have more institutions with course and degree offerings.
2. The majority of the courses admit undergraduates, but the degree programs in most cases are Master's, with fewer institutions offering Bachelor's or Doctorates.
3. Even though titles of courses and the sequence in which they are taken varies, the overall content is similar in institutions offering degree programs.

Although the number of institutions offering training has increased over the past decade, the percentage of total institutions is still embarrassingly small. Laird and Kowalski (1972) surveyed 1,564 colleges and universities with an enrollment of 500 or more and found that only 13% currently offered courses dealing specifically with the education of the gifted child. Another 12% indicated that they were preparing teachers to become aware of and assist gifted youth to perform at or near potential. The picture presented in this article is not entirely a bleak one, however, as 32% of the institutions not currently offering courses were interested in doing so, and 40% of those now offering courses were interested in expanding their programs. Available data seem to indicate that there is a genuine need for expansion. In a survey of students taking an elective course on the education of the gifted, Lazar (1973) found that 58% indicated a "sincere need to study the gifted as their primary reason for taking the elective course . . ." (p. 278). In the writer's own experience, at least 60% of the students in an elective course on the gifted had chosen that particular course because of a sincere need. Mohan (1973) who used a six step procedure of (a) a search of literature, (b) a survey of local faculty thinking, (c) responses from researchers

and teachers in the field, (d) a survey of student teachers, (e) a survey of classroom teachers, and (f) results of inservice workshops, found that there is a great need for a course in creativity in teacher education programs. More research of this nature may convince institutions of higher education to begin programs.

As previously mentioned, a significant trend has been to offer graduate rather than undergraduate degree programs in education of the gifted. This practice seems to stem from the belief that teachers of the gifted should be experienced teachers who have already shown that they have ability to teach in a regular program. Others seem to believe that this also insures a background of liberal education before the prospective teacher undergoes specialized training (Fliegler, 1961; Hildreth, 1966; James, cited in Hildreth, 1966).

Course Content and Offerings

As indicated in the previous section, the overall content of courses on the education of the gifted and talented is similar in most institutions. In cases where only one course is offered, the subject is usually the psychological and educational characteristics of gifted children combined with an overview of current practices for educating these children. If only two courses are offered, the first usually deals with psychological and educational characteristics while the second usually deals with curriculum and materials development. Institutions with degree programs usually offer a sequence of courses similar to the following:

1. *Nature and Needs of the Gifted.* The content consists of topics such as characteristics, problems, myths perpetuated about gifted and creative children, psychological considerations, and identification measures.
2. *Materials and Methods in the Education of the Gifted.* Content usually centers around the most appropriate instructional strategies and materials to be utilized with the gifted. In many cases, time is spent in designing materials and in developing appropriate curricular units. Emphasis, in many instances, is also placed on techniques for individualizing instruction for the gifted.
3. *Education of the Gifted.* A course of this type is usually concerned with exploring various programs and administrative arrangements currently in use in schools as well as other related issues.
4. *Seminars in the Education of the Gifted.* Seminars usually involve a less structured approach through which students explore topics of interest to them as well as controversial issues in the field. Independent study and related techniques are often utilized.
5. *Practicum in the Education of the Gifted.* Practica usually involve either a variety of practical experiences with gifted children or one in-depth experience, depending on the interests and needs of the students. Examples of some of the experiences provided are: student teaching in a program for the gifted; internships with consultants, administrators, and other local school district personnel involved in programs for the gifted; visitations to several programs for the gifted; observation of gifted students, including the writing of case studies; and internships in state and federal programs for the gifted.

In many cases, the program also offers separate courses in creativity and its development. In most programs, provisions are also made for students to pursue topics of individual concern and interest through independent study courses, readings courses, research seminars, and workshop courses.

It must be emphasized again that the previous description is a generalization of the content usually taught in a sequence of courses related to the gifted. The topics may be taught in different combinations and sequences and under different titles. The above description is mainly intended to list certain commonalities between programs as an indication of consensus of opinion about the importance of certain learnings.

Staffing

In most instances, one person on the faculty of the special education or psychology departments is responsible for the training program. This person is usually trained in educational psychology or special education, and has both specialized training and practical experience in gifted education. The majority of these professors are also leaders in the field of education of the gifted and talented, since the field is so small. They also serve as consultants to local school districts in program development, consultants to federal programs, and inservice training leaders in addition to speaking at numerous conferences.

Selection of Students

Students accepted for programs are usually those who are admitted through regular university procedures. Additional procedures are established when fellowships or traineeships are offered.

Practical Experiences

In addition to similarities as listed above, significant differences between programs do exist,

especially in the specific content and the amount and kind of practical experiences offered. Some of the programs emphasize cognitive learning while others emphasize attitudinal changes. Some are designed primarily for teacher training while others are designed to train researchers, consultants, administrators, and other leaders in the field of gifted education. Since the purpose is different, the emphasis in content and practical experience is also different. For example, in a program designed for leadership development, content will be much more theoretical in nature and include less emphasis on teacher-pupil relationships and day to day teaching techniques. The practical experiences in this situation would include such things as field testing curricula designed for the gifted rather than observation of children, internships with directors of gifted programs rather than student teaching, and so on. Other programs are designed to meet the needs of the student, whether he or she is planning to teach or become involved in other aspects of programs.

John Feldhusen (1973) described practicum activities for undergraduates and teachers involved in his course on the education of gifted children: (a) area schools cooperate in nominating a child for each student in the class; (b) college students arrange to observe the child at home and at school, test and interview him, interview his parents and teachers, and carry out enrichment activities with him; (c) college students spend one and a half days observing in a special class for the gifted; and (d) students make a report to the parents and child, evaluating his talents, and suggesting special educational activities which might be helpful to the child. Evaluations by principals, teachers, parents, and children have been very positive, and college students found the program to be enjoyable and profitable. Parents and teachers evaluated the performance of the college students on (a) ability to interact with parents and teachers (b) professional knowledge, (c) the quality of reports, and (d) promptness and responsibility. Ratings were on a good-fair-poor scale—7% fair, 1% poor, and 92% good. This type of program has implications for increasing cooperation between public schools and universities as well as developing additional practical experiences for training programs.

Program Variations

One variation on the course sequence model was developed in Illinois when funds were available to assist universities in developing innovative training programs for teachers of the gifted. Conducted at Southern Illinois University at Edwardsville, it combined the training of preservice and inservice personnel. The program was developed for 12 students—five graduate students presently teaching in the area, five undergraduate students, and two full time graduate students serving as graduate assistants. All were enrolled in a sequence of courses which could lead to a degree in special education of the gifted, including between 12 and 28 quarter hours dealing specifically with gifted education. The purpose of the program was to pair these teachers and prospective teachers in teams for the duration of the training, so that in addition to learning together and sharing experiences, a close relationship would be developed between each pair. The two full time graduate students served as assistants to the project director in supervision, demonstration teaching, consultative assistance, and other related tasks. Other students, not receiving fellowships, were also enrolled in the courses. The following experiences were among those provided for participants:

1. Academic courses on the education of the gifted and talented.
2. Work in an inservice teacher's classroom to apply principles learned, including supervision on a regular basis by the project director.
3. Supervision of a preservice teacher with assistance from him/her on prearranged tasks.
4. Selection and/or production of curricular materials appropriate for the gifted.
5. Participation in microteaching.
6. Student teaching or supervising student teaching.
7. Practicum experiences for graduate students at the Area Service Center for the Gifted.
8. Visitation of a variety of gifted programs.
9. Attendance at conferences and meetings on the education of gifted children.
10. Independent study involving research, field study, program planning, and planning program evaluation procedures (Shaffer, 1971).

Unfortunately, funds for this category of teacher training were discontinued the following year. However, preliminary evaluation results did indicate that the concept was successful. Preservice students especially appreciated the interaction with inservice teachers, both in their classrooms and in workshops and conferences related to gifted education. One definite drawback to this program was the fact that most inservice teachers in the program were teaching in regular, self contained classrooms. Most of the preservice teachers felt that they needed more experiences with identified gifted students, indicating that at least part of their practical experience

should have been in established programs for identified gifted students with teachers experienced in working with these children (Maker, 1973).

Another exciting variation in programing that utilizes basically a course sequence approach is still in the developmental stages at California State University at Long Beach. This program, supported in part by a grant from the Bureau of Education for the Handicapped, US Office of Education, provides for the inclusion of the gifted with teacher preparation in other areas of special education. The specialist program is entirely competency based, including both generic and advanced specialist training. Specific competencies are listed in the following areas:

- Assessment of physical, intellectual, social, and emotional characteristics.
- Assessment of learning abilities in relation to psychological, genetic, physiological, social, and cultural conditions.
- Assessment of motivational and attitudinal differences.
- Utilization of procedures for individualized instruction.
- Implications of exceptional conditions, for the instructional program.
- Identification of issues and research findings for program implementation.
- Counseling exceptional pupils and their parents.
- Evaluation of instructional systems.
- Analysis and evaluation of program elements.
- Intervention to extend interaction.
- Planning and conducting parent meetings.
- Utilization of ethical practices.
- Self assessment and professional improvement.

Each of these areas is further subdivided into more specific competencies and then further into behaviors. The program guide lists specific competencies to be achieved, the performance criteria and level expected, experiences and instruction to be provided, the learner responsibilities, provisions for informing the student of his competency, and the courses provided. A handbook is currently being devised that will allow for translation of competencies into operational instructional objectives and planned activities to meet these objectives (California State University, 1974).

Also in the developmental process is a large scale validation of the competencies required. A sample of teachers of the gifted will be asked to react to the competencies listed by: rewriting those which are ambiguous or incorrect in some way, eliminating unnecessary competencies or adding necessary ones, and weighting each of the competencies on a 5-point scale of most important to least important.

When the program is operational, other features will include an "entry behavior test" (which may include assessment of the student's performance in a workshop situation) designed to measure skills and attitudes as well as knowledge, an "exit behavior test," program options based on the interests of the students, a system for continual modification and change, and a yearly review process.

Although some of the problems such as what to do with a student who exhibits all the competencies at the beginning of the training provisions for those who need a longer time in the training process have not yet been solved, the program has great potential.

Because of state certification laws, other institutions of higher education in California are also in the process of developing competency based programs.

Evaluations

Few universities have systematically evaluated any of their teacher training programs. It seems that most only employ the required student feedback techniques. These are mainly descriptive, based entirely on the student's perceptions of the course, and limited to one course at a time rather than an entire degree program. The purposes of these evaluations are usually assessment of the instructor and assistance in modifying teaching methods employed by that person. In a search of the literature and calls to directors of university training programs, only four evaluations could be found. Many evaluations of summer institutes and other university based teacher training designed as *inservice* can be found. These are reported in the next section.

The first of these evaluations, conducted by Kooyumjian (1969) was designed to assess cognitive and affective changes in students enrolled in a university course on education of the gifted and the same changes in teachers and administrators enrolled in several summer inservice training workshops on the education of the gifted and talented. The main purpose of the evaluation was directed to inservice, but many of the findings have implications here. Using pre- and posttest data on a diagnostic test of content on teaching gifted children, a test designed to measure adult intellectual ability, a personality inventory which indicates the basic type of structure of a healthy person's personality, and other informational measures, she found significant differences between the groups. Below is a summary of those findings and conclusions which seem most appropriate to this discussion.

1. The main objective of the university course was to increase knowledge about gifted children, and it was effective in doing so.
2. Even though achievement in content on gifted children was an incidental goal for the workshops, to be learned through independent study, seven of the nine workshops showed significant gains in content on gifted. In addition, two of the workshops were not significantly different from the academic course in content gain.
3. There were no changes in attitudes of the students in the university course.
4. There were changes in attitudes of the participants in all the workshops.
5. Individual differences in content gain decreased in the academic course groups, but increased in the workshop groups.
6. Intellectual ability and sex seemed to be irrelevant except to one section of the attitude scale.
7. In the academic course, more than 60% of the participants reported that they gained more information from reading than through discussion and instruction; in four of the nine workshop groups, more than 60% of the participants reported that they gained more information through discussion; and in the other five workshop groups, participants reported a combination of two or three of the methods listed.

A major drawback of the study for the purposes of this book was the lack of information about the methods used in the academic course. Some of the methods utilized in workshops were described, but no mention was made of what actually happened in the everyday classroom situation. One can only assume that methods were very similar to most university courses – a combination of lecture, discussion, reading assignments, papers, and some possible practical experiences. In addition, no part of the evaluation was concerned with actual performance of graduates in their classrooms.

In another evaluation, Maker (1973) attempted to determine the effectiveness of university based teacher training programs which were supported in part by the Office of the Superintendent of Public Instruction. The first of these programs has already been described above on page 23. The second, located at Northeastern Illinois University, consisted of a sequence of four graduate courses on the education of gifted children which could be applied toward a degree in special education. There was no degree in gifted education at the time this evaluation was conducted, but a plan had been submitted to the graduate school. Most of the students were full time teachers, many in gifted programs, so the majority of their practical experiences were related to the development and testing of ideas in the student's own classroom. Opportunities were provided for visitation, attendance at in-service training sessions, and conferences.

Fellowships were offered to a limited number of students, but others who were interested could take the classes. Selection of fellowship recipients was on the basis of recommendation of administrators or supervisors acquainted with the work of the candidate, interest in teaching gifted children, and academic records. The director was seeking successful experienced teachers who were likely to utilize training received from the program.

The evaluation employed a variety of techniques, including questionnaires to graduates, interviews with students in the programs, telephone calls to administrators of graduates, and a questionnaire designed to assess the instructional climate in classrooms. Results are only reported here for the two universities with a *sequence* of courses that could lead to an area of specialization. Below is a summary of some of the findings that seem most relevant to this discussion.

1. The three categories of responses most often listed as strengths of the program by graduates were: (a) contact with others in the field of the gifted and talented through attendance at workshops and inservice training or visitors to the class, (b) the flexibility of choices within the framework of the program and classes, and (c) the content learned. Students presently in the program also liked the flexibility and chances for pursuing individual interests.
2. The three categories of responses most often listed as weaknesses of the programs by graduates were: (a) too few practical experiences were provided, (b) a greater scope was needed – more courses on different topics as well as different content covered in the courses offered, and (c) a variety of resource people were needed as the same instructor taught all the courses. Students presently involved in the program also felt they needed more experiences with identified gifted children.
3. Most graduates felt they were well prepared for their jobs, but were reluctant to attribute this competence to the training they had received in gifted education.
4. Most graduates and students felt the programs had been successful, and felt prepared to work in gifted education. However, only a small majority of graduates felt that the training was more relevant than the inservice workshops they had attended.

5. Methods most often listed as being utilized by the instructors were class discussion of controversial issues and independent study. However, in one of the programs, students estimated that the instructor talked over 60% of the time while her ideal was 40%. In the other program, the instructor's performance was consistent with her ideal 40%. Students and graduates both listed as important the opportunities to attend training, particularly the inservice offered by the state gifted program outside the university setting.
6. More emphasis was placed on the higher thought processes of application, analysis, synthesis, and evaluation than on the lower thought processes of memory, translation, and interpretation.

A major drawback of the study, however, was that it did not assess the actual performance of the graduates in their classroom or the changes in children. Telephone calls to administrators gave some indication of the success of the teachers, but more information was needed.

The third report (Bruch & Walker, 1973) was not intended to be an evaluation per se, but was designed as a survey of teachers certified in gifted and talented education who had completed an approved degree program at the University of Georgia. A more extensive evaluation is in preparation, but some of the known results are relevant to this discussion, paralleling those in other studies. Many respondents to the Georgia survey agreed, for example, that there should be an increase in real or simulated experiences with gifted and talented students in situ. Other felt needs were for a strengthening of content related to curriculum development, assistance in locating and using different types of media and materials geared to gifted and talented students, and for greater flexibility in the program. (This last was not expressed directly but can be inferred from the respondents' comments.) Those who were in roles involving the coordination of gifted and talented programs expressed the need for training in public relations skills such as public speaking, legislative watchdogging, newspaper publicizing, and program administration. Other such comments emphasized a need for available options for those who would be assuming (or desired to assume) various roles in addition to that of teacher.

The fourth evaluation (Gear, 1974) is a five year progress report on the Teaching the Talented Program of the University of Connecticut, Storrs. This program, supported by the Education Professions Development Act, is designed to recruit and train both prospective and experienced teachers and leadership personnel to work with gifted and talented youngsters from educationally deprived backgrounds. It is concerned with the process of change and the role of change agents in the schools.

Students receiving fellowships were selected on the basis of their potential as future contributors to the existing body of knowledge about the disadvantaged gifted and talented, as evidenced by: (a) their demonstrated leadership and past background, (b) demonstrated commitment to a career in the area of educating the disadvantaged, and (c) potential for graduate work.

The program consisted of three components: theoretical (coursework), practical (internships), and integrative (linking practical and theoretical experiences). Specific objectives were developed, relating to this basic framework, which would be flexible enough to accommodate persons with varying backgrounds and aspirations. The theoretical component included courses in the broad areas of psychology and education of the gifted, talented, and creative; in the sociology of minority groups, Black history, social and cultural dynamics, and urban life; and in the student's professional areas of interest. The practical component involved internships in a variety of locations—urban schools, colleges and universities, community action agencies, state or regional agencies, and suburban schools—and performing a variety of roles—teachers, tutors, counselors, administrators, curriculum specialists, and researchers. The third component, integrative experiences, consisted of seminars, discussions with resource personnel, and on-site visitations to programs for gifted children and youth from disadvantaged backgrounds.

Evaluation of the program has been both formative and summative. During each year data are collected relating to each component of the program, and needed changes are made whenever they become apparent. For example, during internship experiences, students frequently assessed their own progress in relation to their objectives, the staff made on-site visitations, and the staff conferred with cooperating supervisors. Summative evaluations were concerned with perceptions of the program by fellows, the success of the program in preparing fellows to enter various fields, and changes in the organizational structure of the program. Following are some of the results reported:

1. Most former fellowship recipients agreed that the most valuable component was field experience.
2. Other valuable aspects were interaction with peers; flexibility in choosing field experiences, coursework, and field trips; seminars; and problem solving situations.

3. All felt they were more successful in their jobs because of their programs.
4. Everyone found different aspects helpful.
5. Even though this is only a preliminary report, many impressive achievements and honors are listed for graduates and fellows still in the program.

Although this is the most comprehensive of the evaluations, it is only a progress report. It does not measure effects on children or the performance of graduates in their job situations. Such achievements as dissertations, new curricula, present positions, membership in professional organizations, and honors are indicative of the potential impact of trainers, but an assessment of the effects of products and actions are more relevant measures of success.

Summary and Recommendations

Except for variations in content and individual teaching methods, most programs designed to train teachers of the gifted in a university setting are very similar. Some programs have been more innovative than others. It is hoped that the present trend toward more programs will continue.

Continuing Assessment of Programs

If educators are to make progress and adequately train teachers to direct the learning of our most talented students, it is recommended that they must *(a) look more closely at established practices and try to determine if they are the most effective that we can design, (b) try some different approaches to determine if they would be more successful than the old, (c) make changes that seem to be necessary—either add or delete parts of the old models, (d) continually assess the results in our changing society, and (e) make adjustments as they become appropriate and necessary.* It often seems that we have been doing the same things for many years, assuming that these things are effective, but never knowing for sure, and never really attempting to find out.

Only a few programs have been evaluated (usually those receiving state or federal funds), and these evaluations have been limited. They have determined students' and graduates' perceptions of the success of the programs, and in some cases have determined that students did achieve certain content learnings.

Evaluate Programs by Changes in Students

Since the ultimate test of any teacher training program is the success of the graduates in producing desired changes in students, we must *evaluate the success of programs based on changes in students.* In order to evaluate, however, we must establish objectives that can be assessed. Therefore, *directors of training programs should make some decisions related to the knowledge, skills, and attitudes they want to develop in teachers based on how these teacher characteristics actually affect children.*

Even though evaluation results are scarce, findings in two areas are consistent—students and graduates alike feel that the practical experience they get as part of their training is the most valuable. They enjoy and appreciate flexibility for individual needs within the established framework.

More Practical Experiences

It is recommended that training programs should increase opportunities for practical experiences as much as possible. Some of the following have been provided or could be provided as relevant learning experiences:

- Pair an undergraduate preservice teacher with a graduate experienced teacher for a year or longer.
- Arrange on-site visitations to gifted programs *with provision for interaction with the school staff after an observation period.*
- Provide internships and apprenticeships with master teachers, including experiences similar to student teaching in a *variety* of settings. Most student teachers only have experience with one teacher in one school with one group of students—and for too short a period of time. Lengthen the teaching time by including some of the time that might have been spent in methods courses. For example, several elementary education departments have found that "block" programs are extremely successful. In these programs, sophomores and juniors sign up for a block of three methods courses. They spend two to three weeks in classes designed to give a background of information on methods, then begin to spend one hour a day teaching in a classroom in the area. Since they are taking three of these courses, they spend one-half day teaching three subjects. During the teaching experience, they spend one to two hours per week in class discussing problems, strategies, and other concerns. The last week or more is spent with the instructors again, sharing ideas and experiences with other classmates. Although students complain that they work twice as hard as others in regular methods courses, they feel much more prepared for teaching. Instructors of these courses feel that the program is highly successful.
- If no programs exist in the immediate vicinity, include activities with gifted children (identified by college students) similar to those described on page 15.

- Field test curriculum developed in classes on children and make necessary changes based on these trials. Have students participate in public school curriculum development meetings and projects.
- Utilize the university's microteaching laboratory and if no "real" gifted students are available have the college class role play stereotypes of gifted children, or gifted children they have known.

Although the literature is filled with discussions of characteristics considered to be prerequisites or necessary "entering" characteristics for trainees, students accepted into training programs are not accepted because of having these desirable characteristics—they are accepted mainly because of past grades, that is, performance in academic situations.

Criteria for Entering and Exiting

It is recommended that preservice programs assess the entering attitudes, knowledge, and skills of prospective trainees and then decide either to establish minimum criteria for acceptance into the program based on the relationship of these characteristics to the teaching situation, or accept everyone into an individually designed program to accomplish the needed changes, both in attitudes, skills, and knowledge.

Students are not permitted to leave a training program because of possessing desirable "exiting" characteristics, but because they have fulfilled the course and program requirements (number of hours, reading assignments, and the like). Student evaluations (grades) in too many cases are based entirely on mastery of content rather than possession of desirable attitudes and skills.

Graduation Based on Competency

It is recommended that graduation and grades should be based on competency—possession of needed knowledge, skills, and attitudes—rather than the fulfilling of the traditional requirements of hours, reading assignments, and courses. Some students may already possess the needed characteristics while others may need to spend varying amounts of time in the program.

Kooyumjian's study confirmed many believs that college courses teach content but do not accomplish attitude changes. If this continues, Intuitive children will continue to be taught by Sensing teachers who do not understand or care for their kind of thinking. Teachers will continue to resist changes designed to keep pace with the changing needs of society.

Even though research indicates that experience with programs as well as knowledge of the characteristics, learning styles, and provisions for gifted children produces more positive attitudes toward special programs for the gifted, knowledge of content alone is not enough to produce significant behavioral changes in teachers.

Programs to Develop Positive Attitudes

It is recommended that programs be assigned that will develop positive attitudes toward acceptance of change and the need for development of creativity and problem solving skills in students to help them cope with our rapidly changing world.

Inservice Training

FOR purposes of this book, the term "inservice training" means teacher training designed to train teachers who are presently teaching, or will in the near future be teaching, gifted children. It can be conducted in the local district setting, on campus at a university, or in any other appropriate setting.

Inservice training for teachers of the gifted has taken many forms since teachers trained by university programs are so scarce in this field. Some of the more successful methods have been summer institutes, academic year institutes, use of local district consultants who act in a consulting and training capacity all year round, demonstration centers, Area Service Centers, technical assistance systems, many variations on the workshop model, and many other combinations of the above. Some offer graduate credit and others do not.

Since several of the above models have certain similarities, they are grouped and described in terms of general program models. Variations of the models are described, compared, and contrasted, and evaluation results are reported for each general model. Representative models were chosen for several different reasons: (a) each is unique in either purpose, design, staff, duration, or other significant aspects; (b) evaluations of their effectiveness are available; and (c) they show promise of success based on these evaluations.

Summer Institutes

Purposes

Probably the most widely *used and abused* form of inservice training has been the summer institute. These training programs are generally established for purposes of: (a) training teachers in one school district for a program that will be beginning in the near future; (b) continuing education to keep teachers aware of new developments (e.g., new research in creativity development has had great implications for teachers concerned about the gifted); and (c) training or retraining teachers from a certain region of a state or several states who will be or are presently teaching in gifted programs.

Sponsors and Staff

Sponsoring or host agencies may vary. In some instances, the local district will plan and conduct the training itself (usually when the district has received a state or federal grant for this purpose) and will employ either nearby university personnel, consultants from out of state, or a variety of state, local, and other resource persons to conduct the training sessions. In other cases, the state education agency may be the host, employing its own personnel, university faculty, local district personnel, or a combination of these as staff. Some experimental or model projects will offer institutes to train teachers in a certain region, and usually employ the regular project staff as leaders.

Participant Selection

Participants in these institutes usually are selected on a first come/first served principle based on a desire to attend, and on whether or not they are teaching in a special program (at present or in the future). Some local districts require certain teachers to attend these sessions. In some cases prospective participants must meet specific standards before being accepted. In other institutes, priority is given to members of a team from one school district, while other institutes accept those who seem to indicate the most potential for accomplishing changes.

Program Components/Activities

Although the general purpose of most inservice institutes is to improve the teaching of gifted and talented children through teacher training, the specific program components, methods, and procedures vary from institute to institute as do the specific purposes. Therefore, some representative projects as well as some unique projects will be described.

Institute I

Since summer is a good time for designing special programs for gifted students, many institute directors take advantage of the opportunity to accomplish a twofold purpose—providing an enrichment program for talented students whose needs may or

may not be met in the regular program, and training teachers to deal with these students. One such institute, described by E. Paul Torrance (1972), has been conducted in a similar format eight times. The objectives of the leadership were: (a) developing increased awareness of the "creative positives" of children, especially those who are economically and socially disadvantaged; (b) developing skills in acknowledging and using these "creative postives"; (c) developing more favorable, realistic attitudes concerning disadvantaged children; and (d) increasing the repertoire of teaching skills.

Participants in the workshop as leaders were mostly experienced teachers who were enrolled in Dr. Torrance's class on the learning problems of disadvantaged children and youth.

The institute involved three phases, the first being "eight hours of orientation, sensitization, films, and discussion in the classroom" (p. 3). The second phase was a three-week workshop for disadvantaged children held in a park near the campus. Students, aged 6-13, participated in many large group, small group, and individual activities planned and led by the teachers. These activities included such things as clay sculpture, music, creative movement, dance, creative dramatics, science, crafts, carpentry, "Great things that happened today in the Workshop," and group brainstorming. Students were assigned to groups on the basis of preferences at the time of registration, but were given considerable freedom to change. At the end of each week, the leaders prepared an analysis and evaluation of the workshop. At the end of the three weeks, they evaluated in depth the evidence of growth in one child. In the third phase of the institute, the teachers spent two weeks back in the classroom integrating the workshop experience and considering other alternatives for educating disadvantaged children and youth.

Institute 2

A unique summer institute in which the author participated was one of the regularly scheduled training institutes of the Illinois Gifted Program.* Unique aspects of this institute were the selection of participants, the variety of experiences provided, and the workshop format. It was a cooperative venture, funded by the State of Illinois Gifted Children's Section, codirected by a service and demonstration center director and a regional supervisor of the gifted program; it combined Illinois resources with those of the Creative Problem-Solving Institute (CPSI) of the State University of New York at Buffalo.

The broad goal of the workshop was to "provide selected leadership personnel with fresh and broadened exposure to newer methods and strategies of teaching and learning." In particular, the institute sought to help participants to identify and improve their own talent potential which could then be put to work in leadership roles. Other more specific objectives were related to: (a) developing an awareness of one's own strengths and weaknesses in creative-productive characteristics; (b) strengthening and improving these characteristics; (c) internalizing the creative problem solving process; and (d) applying skills and knowledges in educational situations.

The institute utilized State of Illinois personnel and special consultants with expertise in creativity and problem solving in addition to the staff of the CPSI. Outstanding educators and researchers such as Donald MacKinnon, Calvin Taylor, John Gowan, Robert Eberle, J. P. Guilford, Sidney Parnes, and many other leaders in the field of creativity served as special consultants. Participants and leaders in the Illinois institute were enrolled in one of the week long courses at the CPSI, and so were taught by a number of other CPSI staff from around the country.

The purpose of selection procedures—a personality inventory, a detailed application form requesting information about past experiences and creative teaching methods, and an interview with the directors—was to select the most potentially creative educators who applied. The final group consisted mainly of classroom teachers, but included a few graduate students, some building principals, and some specialists in gifted education.

The institute began with a week of orientation, introduction to various problem solving processes, individual planning, and getting to know each other. The second phase of the institute, held in Buffalo, was a week of participation in one of the three tracks of instruction available at the institute. In addition to internalization of the Parnes-Osborne method of Creative Problem Solving and participation in extra sessions available to all CPSI participants, special activities were provided for the group, including presentations and opportunities to interact with well known experts in creativity. All activities, including group brainstorming, blind walks and other techniques for increasing awareness, film theaters, and experiences with students were designed to enhance the creativity of those who participated.

Quoted and paraphrased material, except where otherwise indicated, was taken from various instructional materials or other informational handouts for the use of participants.

After the week in Buffalo, two additional weeks were spent exchanging information related to the CPSI experience, attending optional presentations by group members and special consultants, and planning and developing individual and group projects. Each participant prepared a prospectus in which he or she described how institute learnings would be put to work. Some of the proposed projects were:

- A research project to determine aspects of creative expression and develop a checklist for use by teachers in evaluating the level of creativity in a student's work.
- A values curriculum incorporating problem solving methods.
- The incorporation of creative problem solving processes in a 9-12 American Studies program.
- A curriculum for teaching critical thinking.
- A plan to apply problem solving techniques to school management.

Before the close of the institute, the participants also spent time analyzing their own posttest information and comparing their own characteristics with those of other educators and with characteristics of eminent creative writers, researchers, and artists.

Other unique institutes sponsored by the Illinois Gifted Program have been designed for leadership development as well as for improvement of strategies for teaching gifted children. The following are examples of exciting training possibilities which can be devised by creative leadership.

1. In order to better meet the needs of schools in its region, in 1972, the USOE Region III Area Service Center for Gifted and Talented Students presented two three week summer institutes instead of the usual one institute. The first was directed and staffed by the three Area Service Center Consultants and began a week before the second, which was staffed by a group of 10 people who had previously been involved in the training activities of the Area Service Center (ASC). Since the institutes were running concurrently, maximum utilization of resources and consultants could be accomplished.

The overall objective of each institute was to help teachers to better meet the needs of gifted children by individualizing instruction. Each utilized a similar format, including both large and small group sessions, a variety of optional sessions from which to choose, and individual consultation with leaders. Options were presented on such topics as identification of the gifted, developing higher thought processes, creativity, value clarification, the use and construction of simulation games, team teaching, content options stressing curricular and methodological alternatives for the gifted, humanities, and other topics of interest to the participants. Sessions could be repeated or added by request of a small number of teachers.

The regular ASC staff served as consultants and advisors to the 10 leaders of the second institute. These nine teachers and one principal were selected on the basis of: (a) demonstrated excellence in regular jobs, (b) ability to convey ideas and experience to others through inservice work, (c) broad background of experience with ideas and strategies of the gifted program, and (d) availability and willingness to be a staff member. They were given eight days of leadership training, a chance to participate in one week of the other institute, and supportive assistance throughout their institute.

2. Another workshop sponsored by the same Area Service Center offered four optional plans for teachers and administrators K-12. Participants could choose any option or combination of options. Plan A included three weeks of awareness and development activities through minicourse options on a variety of topics related to gifted child education. Plan B provided a week of intensive experiences designed to develop personal potential, based on the work of Herbert Otto. Plan C offered a field experience in using the city as a tool for: (a) discovering and developing creative thinking abilities, (b) developing ways to utilize the community as a learning tool, and (c) adapting nontextbook ideas to relevant learning experiences. Plan D offered a one week concentrated study in values clarification and self concept development.

This institute plan provided for the varying needs of participants as well as for maximum utilization of special talents of the ASC consultants. During the planning of the institute, each consultant was asked to design a week long experience that he would like to provide for teachers and administrators. Each was then responsible for this one week experience, and all were jointly responsible for the three week option. Other special consultants as well as leadership personnel from the area were utilized

Institute 3

The third institute employed somewhat "standard" techniques that have been successful in summer institutes, namely the combining of a demonstration program for gifted students and an institute for training teachers. Personnel of California Project Talent, the San Juan Unified School District, and Sacramento State College cooperated in presenting a summer workshop-demonstration program for teachers (Bachtold, 1965). The major

purpose of the workshop was to help teachers become knowledgeable about curricular provisions for the gifted.

Staff consisted of consultative services provided by personnel of Project Talent, demonstration of strategies by staff of the San Juan District, and coordination by a professor of education at Sacramento State. The coordinator presented sessions, directed discussions, and planned teacher experiences.

The format of the institute provided teacher participants a chance to observe one of four program prototypes for the education of specially identified gifted children—acceleration, enrichment, guidance and counseling, and special classes. The teachers also participated in discussion and activity oriented sessions stressing identification procedures, curriculum planning based on case study information, methods of stimulating productive thinking, and program construction.

Evaluation

Evaluation of summer institutes is in many cases based solely on the reactions of participants—whether positive or negative—to a questionnaire presented at the workshop. Although this feedback is valuable in planning future institutes and in assessing general attitudes toward the experience provided, it does not give an objective assessment of changes in the participants, either in attitudes or amount of knowledge, or provide indications of changes that actually occurred in the teacher's behavior upon returning to the classroom. These last two kinds of information must be obtained in order to assess adequately the effects of a training institute.

In the evaluation of Institute 1, Torrance (1972b) found that the teachers "showed large and statistically significant gains in the direction of more favorable, more realistic, less prejudiced attitudes concerning economically and culturally disadvantaged children" (p. 9). This information was based on an opinion questionnaire designed to determine attitudes and predict how these attitudes would affect the establishment of good relationships with disadvantaged children. Although data regarding classroom performance after the institute was not systematically collected, the situation provided for observation of teaching techniques *during* the workshop. Almost all of the teachers became more skilled in recognizing and acknowledging the creative positives of disadvantaged children, and some became very skilled. Even though some of the teachers were unwilling to experiment with and practice skills of creative teaching, most of them did show evidence of building their teaching on the creative positives of the children. Through continued contact with participants after the end of the institute, the directors have found that several new programs have been initiated in the schools to make possible more creative teaching.

Institute 3 reported positive responses from participants, but did not include any objective assessment of attitude or knowledge changes. Furthermore, the workshop format did not allow for observation of participants in teaching situations.

Specific statistical data from Institute 2 is not available, but results were extremely positive. A pre- and postinstitute personality and ability inventory was administered, and the results reported to participants during the institute showed many changes. Every participant changed in directions indicating increased creativity and many changed drastically. Systematic followup services—including a two day session for participants, a newsletter, and numerous visits to classrooms—were provided for participants. Through this continued contact and other association with administrators in the schools represented, the directors found much evidence of leadership. Only six months after the close of the institute, the following accomplishments were among those reported (Eberle, 1972):

- 16 members of the institute planned and conducted a two day problem solving workshop for 60 educators.
- Three school districts have initiated inservice training in creative problem solving.
- A problem solving group guidance program is being taught in an elementary school.
- Problem solving processes have been utilized in teaching mathematics, social studies, and language arts in grades K-12.
- A course in applied problem solving is being taught in a senior high school.

For the other unique institutes described in this section, no pre- or postinstitute attitude or objective data were available, but the Area Service Center concept provides continued contact with participants in all previous training efforts as well as ASC involvement in the entire development process of gifted programs in the region. Some examples of changes observed by ASC consultants, Area Gifted Supervisors, and local administrators were:

- Establishment of classroom interest centers in many classrooms.
- Leadership by summer institute participants of several workshops during the following school year.

- Increased sophistication of proposals for gifted programs submitted by administrators after attending an institute.
- Proposals for new gifted programs submitted by schools that sent a team or a teacher to a summer institute.
- Gifted programs initiated in all subject areas and grade levels in many schools.
- Individualization of instruction with special provisions for gifted children was initiated in many classrooms and schools.

The problem, in this instance, is one of determining activities that produced the changes, since many of these same people participate in numerous workshops and other activities sponsored by the ASC. A combination of training opportunities will no doubt be more effective than any single one, but in the opinion of ASC personnel and the majority who have attended summer institutes, these intensive experiences were the most important factors in producing changes in teacher behavior. The results of a survey of ASC clientele (Program Assessment and Evaluation Unit, 1973) showed that summer institutes ranked third as most beneficial of the service delivery methods utilized, with workshops and the newsletter ranking first and second, respectively. It is not known how many of those listing institutes as the least effective had attended one. One must understand, too, that program administrators are often more concerned about the cost and numbers of teachers reached rather than which services produced the most behavior change.

According to the results of a three year evaluation of the Illinois Gifted Program (House et al., 1970), summer institutes were the single most influential training devices utilized in the program. This conclusion was based on several findings:

- The more teachers a school district sent to their summer institutes, the better defined gifted program the district submitted to the State.
- Teachers attending these summer institutes were found to be considerably more influential in gifted program decision making than those who had not.
- One of the three major reasons for discontinuance of a gifted program was lack of trained personnel.

Kooyumjian (1969), in an extensive evaluation of the success of summer institutes sponsored by the Illinois Gifted Program, compared them to a good academic course on the gifted. She found that seven of the nine workshops showed significant gains in content on gifted education even though content information was an incidental goal to be learned through independent study, and that all the workshop groups made significant attitude changes. Furthermore, the attitude changes in all but one of the workshops were in the direction of intuition and perception, which are the two scales of the personality inventory which differentiated between MacKinnon's most and least creative men and women. Changes were in the direction of more creative—toward a more open and free attitude toward life.

The workshop goals were to change teacher attitudes—preparing them to be more creative and more receptive to different ideas, to learn a body content uinque to that workshop, and to learn a background of content on gifted children. She concluded that all the workshops definitely had accomplished their purpose.

What Causes Success?

Although at least two of the institutes described here were effective in producing positive changes in teacher behavior, in many cases institutes are not adequate training devices. Many who have had continued contact with educational institutions have had either direct or indirect experience with institutes causing little or no positive changes. Thus it seems that the crucial question is not "Can the summer institute model be an effective method for training teachers?" but rather "What methods, procedures, or other factors cause an institute to produce desired behavior changes?" The problem involved in attempting to distinguish between effective and ineffective training using this model is in determining methods and finding evaluations of unsuccessful institutes through a search of the literature. Failures are seldom reported or widely disseminated. One can only raise doubts about the success of institutes that are inadequately evaluated or rely on personal experiences and word of mouth reporting.

Since an attempt to contrast successful and unsuccessful institutes is relatively impossible, the alternative is the analysis of successful summer institutes to determine their common elements.

Self Assessment

The institutes in Kooyumjian's (1969) study had certain features in common: (a) collection and analysis of self assessment data such as tape recordings, teacher prepared examination questions, and observations of students; (b) actual teaching of classes of children in the summer session along with observation and analysis of videotapes of teaching behavior; and (c) administration of a series of self scoring diagnostic tests in the area of knowledge about gifted education, knowledge of education

change, attitudes toward providing for students with different talents and characteristics, and knowledge of the process of change in education. It appears that the underlying theme of all these features was self assessment and feedback. According to House's (1970) evaluation, self assessment was the most common feature of all the Illinois summer institutes—and probably the most powerful technique utilized. He describes the procedures in this manner:

> The essence of the self-assessment technique was that objective information about a teacher's professional behavior was collected and later fed back to him in a small group setting. For example, during the spring semester a participant-teacher might tape-record one of his classes. During the summer training session he would be taught how to analyze verbal exchange in the classroom using the Flanders' Interaction Analysis. He would then be asked to state his *ideal* teaching behavior in terms of the Flanders. Finally he would be given the actual tape from his spring class and asked to analyze it and compare it to his ideal. The personal effect of this training technique proved to be powerful.
>
> All of this transpired in a small group of fellow teachers who were also analyzing their own tapes (and finding themselves wanting by their own standards). The small group of peers provided emotional support for finding out one wasn't doing his job as well as he thought (but neither was anyone else). Still operating in a small group of peers, the teachers would then be given a group of ten students with which to teach a lesson and *practice* new behavior more conforming to his ideal. The other members of the group would observe this lesson and critique it. Similar techniques were used employing the teacher's tests, feedback from students, and other samples of the teacher's behavior. (p. 20)

Practice in Realistic Settings

Another important technique utilized in successful institutes is the provision for immediate application of learning in a classroom setting—or at least with a group of gifted students. Participants can either be given responsibility for the child's educational program (with adequate supervision from trained personnel) as in Torrance's institutes, or can simply be given time with a class to try out certain techniques. Although observation of demonstration classes is more effective than an absence of any contact with children, it is not nearly as effective as actually teaching the children.

Behavior "Modeling"

Even though no formal evaluations provide support, it seems that the most common and important aspect of successful summer institutes—and possibly for all training activities—is "practicing what you preach." In most of the institutes described in this section, it is apparent that the leaders were applying the same principles and using the same techniques with teachers that they were advocating for students. For example, the two institutes presented by the Carthage Area Service Center were designed to assist teachers in individualizing instruction to meet the needs of gifted children. Methods such as (a) the combinations of large and small group instruction, (b) minicourses, (c) multioptions, (d) evaluation, (e) independent study, and (f) activity oriented learning are all techniques that can facilitate the individualization of instruction.

Demonstration Centers

Purposes

Another widely used form of teacher training has been the demonstration center. In most cases, these centers are established primarily to serve as a vehicle for illustrating particular teaching techniques or program models with gifted children in realistic settings. Other related objectives are: (a) to test new approaches in a practical setting; (b) public relations, or an attempt to "sell" a particular program in gifted education to the public; and (c) to assist other schools in establishing similar programs by providing an operational program for observation. Probably the best known form of demonstration center, for general education, is the university laboratory school. These lab schools serve as centers for action research practical settings for teacher training and demonstration of innovative teaching techniques.

Sponsors

Host and funding agencies may vary. Some centers are established at universities in connection with laboratory schools, some are part of a local school district, some are administered by state or local agencies and kept apart from the local school district. Funding has been from state and local sources, from Title III, ESEA, and from consortia of local and state agencies. Some states, such as California and Illinois, established demonstration centers as vehicles for initiating and improving a statewide program.

Staff

In most cases, the staff is specially prepared for teaching the gifted and includes only those experienced in working with the gifted. In some instances the project selects inexperienced staff in order to demonstrate the entire program development sequence including the adequate training of staff members. The staff usually consists of a director, who is in charge of general coordination of the program, orientation and guidance of visitors, and public relations, and the demonstration teachers or counselors, who work directly with students. In some cases, a consultant is also employed to take care of curriculum development, teacher training, product dissemination, and other program development activities.

Participants

Visitors to demonstration centers may be teachers, counselors, administrators, university faculty, parents, students, and community members. In most cases they are from the immediate vicinity or from schools participating in the cooperative project. Some projects have received national and international recognition, and the two state networks (California and Illinois) of demonstration centers have attracted visitors statewide.

Program Components/Activities

Although the general purposes of demonstration centers are similar, the program components and specific activities vary in relation to the type of program being demonstrated as well as specific program objectives. The following descriptions of two different projects may help to illustrate these differences and similarities.

Demonstration Project 1

This project, developed at Wisconsin University (Rothney & Sanborn, 1968), was designed to demonstrate a three phase program for systematic testing, counseling, and guidance of superior students. The first phase involved selected students from 75 secondary schools who visited the university laboratory one day each year. The second phase consisted of an attempt to acquaint teachers, administrators, parents, and citizens with procedures for identifying and educating gifted children. The third phase was a survey of schools in the state to determine if certain activities had been implemented.

University faculty along with graduate students with experience in teaching and counseling served as staff for the project.

Activities during the first part of the project were the evaluation, counseling, and class attendance offered to selected students, interviews with parents, and visits to each student's school. In the second part of the project the staff conducted a faculty meeting or inservice training session each year in each participating school, visited or conducted extended training sessions in schools requesting such assistance, and presented two day invitational workshops to professional groups in many states. The third part of the project involved an assessment of current practices.

The major teaching training component of this project was the second phase—presentation of workshops and school visitations. The training usually involved sending written reports concerning each participating student to the school, including information about characteristics and needs as well as a list of suggestions to the school for providing adequately for the student. These reports were to be circulated among school staff and then used as a vehicle for discussion during the faculty training session. In some cases, schools requested long term training experiences in which the school would release teachers to spend a day in training sessions with laboratory staff. Regional invitational conferences were presented to disseminate research findings, to discuss actual case studies, and to discuss alternate provisions for gifted high school students.

Demonstration Project 2

The most extensive and possibly most successful demonstration project was a cooperative research component of the Mentally Gifted Minor Program in California (Plowman & Rice, 1967). The purpose of this project was to plan, develop, demonstrate, disseminate, and promote differential plans for the education of the gifted. The four program prototypes utilized were: (a) acceleration through use of the summer school; (b) enrichment in the fine arts, science, and the language arts; (c) a cooperative counseling and instructional program; and (d) full time classes organized for gifted pupils.

The project, under the direction of the California Department of Education Staff, established six demonstration sites in local school districts based on geographical representation, past experience, and willingness to conduct the project. The districts organized, implemented, and staffed the programs with state and local funds, while federal funds were used to acquire state level professional personnel, conduct planning and developmental studies, evaluate programs, and produce films, filmstrips, instructional guides, and other such materials.

Staffing for projects was determined by the type of program to be demonstrated, but consisted mainly of a state level consultant assigned to the

project, teachers, administrators, or counselors to be involved in inservice and demonstration, and special consultants needed for various phases of the project. The role of the consultant was to refine descriptions of programs, to develop local products needed for implementation of programs, conduct workshops, inservice training institutes, and other services, and to disseminate and export the program models to other districts. Teachers began as learners and progressed through training until they became competent in demonstrating their particular teaching strategy. Table 1, an example of a program development sequence in one of the projects, shows staff responsibilities in more detail. Special

Table 1

Sequential Developmental Tasks of Consultants, Teachers, and Demonstration Center*

Field consultant	Demonstration teachers	Pupil programs	Demonstration center
1. Analyzes total tasks, establishes priorities, opens intradistrict lines of communication	1. Specialists, team leaders selected	1-3. No formal program	1-7. No formal program
2. Sets down preliminary definitions, operational objectives	2. Criteria for teacher selection codified		
3. Writes lesson plans as examples only	3. Demonstration teachers chosen	*Formal program begins:*	
4. Organizes inservice teacher training	4. Teachers or learners: study methods, advanced contact	4-5. Pupils as subjects for study, selected classes for experimental tryout of newly invented curriculum	
5. Demonstrates curriculum construction utilizing theoretical models	5. Curriculum units written		
6. Advocates strategic changes in classroom environment, teaching methods, and evaluation procedures	6. Teachers compare, criticize, attempt changes, obtain individual consultation	6-7. Selected classrooms serve as "test cases" for experiments in grouping, rearrangement study centers, etc. Reports of findings brought back to teacher training group.	
7. Acts as teacher-demonstrator in actual classroom settings	7. Teachers observe "team" with consultant, learn by doing		*Formal program begins:*
8. Intradistrict dissemination of new curriculum units; advertise, invite outside observers	8. Teachers competent to become "demonstrators" invite other teachers in, emulate consultant role previously enacted for them	8. Newly developed curricula, methods, evaluation forms universally used in demonstration classrooms	8. Other classroom teachers begin service, observe classrooms
9. Interdistrict workshops set up inservice training tasks reassigned to master teachers Operates as disseminator exclusively	9. Selected classrooms used for interdistrict demonstration; others repeat processes of teacher training and intradistrict export; selected teachers emulate consultant role	9. Widespread export of enrichment programs to other classrooms and outside districts	9. Outside persons invited to observe, attend formal workshops

*From Plowman & Rice, 1967, p. 18.

consultants are utilized as inservice leaders, curriculum consultants, or technical assistants.

Demonstration projects, attempting to show the entire developmental process of a program, documented and made available to visitors all materials and processes pertinent to this development. Such items as workshop format, curriculum materials, formats for developing curricula, and teacher selection procedures were offered when requested. (See Table 1 for an example of a program development sequence from one of the projects.)

Although the entire project can be considered a vehicle for training teachers and other staff, specific activities were related to training district and project staff and to training teachers from visiting schools. Activities related to training school and project staff were the following:

- A sequence of inservice meetings designed to acquaint the teachers with the goals of the project, the needs and characteristics of gifted children, and the latest innovations necessary for educating these children.
- A sequence of workshop type sessions in which teachers are involved in such activities as curriculum construction, tryout, and evaluation.
- One or two day workshops or week long summer workshops.
- Group conferences for the assignment of curriculum building work tasks.
- Demonstration by newly trained teachers to those entering the training sequence, including peer and self evaluation.

Activities related to the training of teachers from other school districts were:

- Demonstration of teaching techniques to visitors.
- Discussion of demonstration with visitors.
- Presentation of regional workshops on topics such as teaching methodologies, theoretical models, program prototypes, identification procedures, phases in program development, evaluation results, and other similar topics.
- Extensive individual consultation with schools desiring to utilize the methods being demonstrated (usually by the field consultant).
- Summer workshops combining a special program for gifted students with a training program for teachers.
- Dissemination of program guidelines, films, filmstrips, and actual student materials.

Table 2 is an example of the activities performed by one project.

Evaluation of Demonstration Centers

Evaluation of demonstration projects is generally twofold: an assessment of the validity of the demonstrated program (determined by its effect on the students), and an assessment of the success of the project in "selling" its program (determined by the number of schools adopting the program).

In the Wisconsin project, evaluation of student outcomes was extensive, including followup through college and into careers. Results were positive. On the other hand, evaluation of the training aspects was sketchy. Although invitational workshops were a major part of the project, they were not evaluated. In relation to demonstration program procedures adopted, results were varied. They showed that schools tended to develop group rather than individual procedures, few schools utilized special procedures, and more positive evaluations were given of group provisions than those designed for individuals. Some of the special programs developed as a result of the project were independent study, part time college attendance, variations in class enrollment and attendance requirements, special projects, seminars, advanced classes, and summer courses. No attempt was made to determine reasons for adopting or not adopting certain programs.

In the California project, evaluation of student outcomes showed that each of the four program prototypes was a viable method of special programing for the gifted. Practical results of the demonstrational aspects were: (a) pupil enrollment in gifted programs expanded from 38,000 to 90,000; (b) the centers influenced the development of programs in over half of the districts in California offering gifted programs; (c) written plans submitted by school districts show evidence of the incorporation of theoretical models for curriculum development advocated by the demonstration centers; and (d) teacher, student, parent, and administrative evaluations of the programs and summer workshops were overwhelmingly positive. According to the project directors, additional positive outcomes were:

- Increased diversity of programs.
- Increased sophistication of existing programs.
- Spillover effect (upgrading of curriculum content has occurred in general education as well).
- Adoption by most districts of more than one program prototype.

Some of the problems and recommendations listed were these:

1. Consultants chosen for creative qualities cannot operate effectively within rigidly defined state

standards in districts where policies are restrictive. They must have authority to make changes in the program.
2. Lack of state financial support hampered the purchase of supplies and equipment.
3. A committee of outside lay and professional personnel were needed to construct and enforce policy.
4. A program may be exported to and adopted by other districts only if it is accompanied by appropriate long term consultant services.

The most important conclusion reached by the project directors is the key to success in demonstration projects:

> The quality and validity of the educational program does not insure its adoption by a foreign school district. Unfortunately, attitudes and other biases of the staff members in a new district appear to count more than the proven qualities of the prospective educational program. Those politically opposed to special classes tend to remain opposed to these classes in spite of the best intellectual efforts to show special classes as a valid program prototype. Conversely, underdeveloped programs may be adopted because of their social appeal, not because of need to consider more seriously the psychological and sociological implications of educational change. (p. 182)

This last conclusion points to a need that was not met in either of the previously mentioned evaluations—the assessment of the validity of the *concept* of demonstration as a vehicle for effecting educational change. An evaluation of the Illinois demonstration centers provides excellent insight into this problem. Over a period of three years, the Center for Instructional Research and Curriculum Evaluation (CIRCE) of the University of Illinois conducted an extensive evaluation of the state's entire

Table 2

Types of Dissemination Functions Performed*

Phase	Intradistrict workshop	Interdistrict demonstration	Regional workshop
Motive:	Specific implementation of teacher training, curriculum construction	Show working program; promote interest to outside districts	"Sell" idea of enrichment programs, widespread utilization of project materials and plans
Plans:	Train cadre of demonstration teachers, arrange period training session. Follow prescribed training outline. Evaluate teacher growth, construct unique curriculum, act as "feeder" source for advanced methods of program dissemination	Orientation to program demonstration of lesson discussion, critical analysis, distribution of guidelines, mounting of available aids	Outline regional plan for promotion dissemination, and establishment of regional enrichment programs, distribution of guidelines, aids
Personnel:	District consultants, resource personnel, demonstration-teachers, trainees	Field consultant, demonstration teachers, guests	Field consultant, regional supervisory level personnel
Evaluation:	Measure teacher growth. Measure student growth. Equate expenditure for teacher training with classroom changes	Ratings of demonstration lessons, Number of requests for services, Ratings of aids (e.g., films)	Program adoptions. Requests for service aids, Ratings of products, Measured effect on curriculum change, Outgrowth of new curriculum applications
Duration:	One-semester workshops	One-day demonstrations	One-day workshops
Followup:	Repeat training programs for new groups of teachers, Utilize trainees for export functions, demonstrations, Modify program by analyzing feedback	Provide field services, consult, advise	Field services recommend required organization, Modify aids, materials from feedback suggestions

*From Plowman & Rice, 1967, p. 40.

gifted program. The evaluation plans included such techniques as observation of demonstration programs, questionnaires to visitors both immediately following and up to a year after the demonstrations, assessments of the quality of gifted programs by various methods including an instrument administered to students and interviews with school staff and parents, and structured interviews with visitors to demonstration centers.

The Illinois Plan for Program Development for Gifted Children, like the majority of educational programs, was built on the "research and development" model of change. The basic process involves an extensive period of research and development succeeded by dissemination to a user population. A well developed form of this model, described by Clark and Guba (in House, Kerins & Steele, 1970), lists four major stages of educational change: *research* to advance knowledge to serve as the bases for development, *development* to invent and build a solution to an existing problem, *diffusion* to introduce the innovation to practitioners, and *adoption* to incorporate the innovation into the target system. A network of approximately 20 demonstration centers served as the main instruments for change. The dependence on demonstration centers was a logical one, since their entire theoretical base is the R&D concept.

According to Havelock (1969), this model assumes that there is a rational sequence of activities, planning must occur on a large scale, and *a passive consumer awaits acceptance of the innovation if it is delivered properly*. The first two assumptions seem to be supported by the Illinois evaluation, but the evaluators concluded, as did the directors of the California program, that:

> The fact that visitors valued the demonstration programs highly had little relationship with later adoption. Situational constraints in the adopting district seem to be of greater importance than the intrinsic characteristics of the demonstrated program or the process of demonstration itself. (p. 33)

The evaluation design in this project was much more sophisticated. The evaluators were attempting to determine whether there was a definite causal relationship between the improvement and expansion of gifted programs and the work of the demonstration centers. The California and Wisconsin evaluations *assumed* that the relationship existed because of the expansion of the program and certain other factors. In the Illinois evaluation, CIRCE wished to determine the specific reasons for adoption or refection of a particular program. Some of the more relevant findings of their report were:

1. Even though the great majority (79%) of the visitors were still favorably impressed with the demonstrations after periods of two months to one year, only 58% said they had decided to accept and use the activities, and only 46% had started incorporating changes. The one item which could indicate definite results—asking respondents to relate a specific, critical incident of how their behavior had changed—showed that only 29% actually had tried an activity.
2. The 29% adoption rate may seem relatively high, but three factors combine to point out that it is a deceptive figure. First, the population visiting the centers was strongly self selected and composed of people who were already at least interested in innovation. Second, interviews indicated that only in 10% of the districts was substantial influence on program development attributable to help from demonstration personnel. Third, no significant correlation could be made between quality of program and visits to demonstration centers.
3. Only about 2% of the sample of local districts had adopted a demonstrated program "in toto."
4. The most important reason for acceptance of an innovation was "divisibility": The activities could be used on a limited basis or parts could be used without adopting the entire activity.
5. The most important reasons for administrators adopting a demonstrated activity were follow-up help from the center and the administrator's judgment of how well the program worked. Motivational value, appropriateness, worthiness, perceived ease of implementation, or involvement with the home program were of little importance.
6. For teachers, most of the variables associated with adoption of a demonstrated innovation were concerned with how well the new activity fitted into the structure of their world, how adaptable it was, whether administrators and other teachers would accept it, and if enough facilities were available.

Many of these results may seem inconsistent with the findings of the California and Wisconsin evaluations. But it should be remembered that the conclusions in the California study were drawn by the project directors rather than an outside evaluator. Conclusions were simply reported, but not supported by any research design. The written plans submitted by each district are the only data supporting the contention that the demonstration centers were the major causal factor in the improvement and expansion of gifted programs. These written plans (no numbers or percentages are reported) show evidence of the incorporation of

theoretical models for curriculum development advocated by the demonstration centers.

Even though the California and Wisconsin projects did not lend much support to any *causal* relationship between centers and the improvements listed, the fact remains that the number of programs did increase. The quality of programs also seemed to improve, at least in the California project. There were certain differences between the demonstration programs, however, which may have caused the differing results. The two major differences were in the amount of consultant services offered to visiting districts and the exportable products available to visitors.

In the California project, field consultants were available to assist visiting districts in planning and implementing the program. They did offer much help, with on-site visits, one to one consultation, and teacher training programs. In Illinois, the demonstration directors were committed to this role, but many were unable to offer as much as was necessary. According to House's (1970) evaluation, these consultant services were the major reasons for the administrators' adoption of a demonstrated program.

Of nearly as much importance was the availability and type of exportable product available to visitors. The California project offered films, filmstrips, guidelines, booklets, filmstrip/record kits, and mimeographed materials containing information about the program, curriculum materials developed, *evaluation of student outcomes*, and the *process* of program development. The Illinois project offered information about the program, and sample curriculum materials used in the program. The important difference is that the California centers offered information about the process of development of the program rather than simply the finished product. The product itself is not as generalizable to a different situation as is the process. Each of the California projects was well evaluated in terms of student outcomes, and these results were made available to other districts.

Although these program differences may account for some of the discrepancies in evaluation results, the fact remains that demonstration centers are of limited value in training teachers because they are based on a weak theory of change. This brings us to the third model, which was an outgrowth of the evaluation of the Illinois program.

Service Centers

The concept of service centers, also called area service centers, technical assistance centers, or regional service centers, is an exciting innovation in the area of inservice teacher training. It has become increasingly recognized because of the seemingly impossible task of training enough teachers to serve gifted and talented students through existing traditional methods. Gallagher (1974) estimates that if gifted programs are to serve 2% of the population (approximately 1,000,000 students), we will need over 40,000 trained teachers. It would take 100 universities 10 years if they graduated 60 students per year to train enough teachers to staff these programs. Presently, not even *one* university trains that many special teachers.

Purposes

A service center is established for the purpose of developing and improving programs for gifted and talented students by providing systematic aid to the programs at their request on problems of their own concern. Since trained teachers are the key to successful programs, and are so few in number, inservice training is usually the major function of the centers. They may be designed to serve a consortium of states, a region within a state, or a number of schools within a local district.

Sponsors

Host and funding agencies vary according to the populations to be served. Some states are operating or are in the process of establishing service centers on a regional basis which are designed to serve a number of counties or school districts, providing a network that covers the entire state. Some centers have been funded federally. Title III, ESEA monies have established resource centers or service centers for a number of cooperating school districts while Title V and other Office of Education grants have supported centers serving a consortium of states. Local districts or states can also cooperate in the establishment of a center, assessing a fee to each participating agency. When the center serves a local district, the funding is usually local or through categorical state monies.

Staff

Staffing is the key to a successful service center. No single consultant in the area of the gifted has the expertise to solve the variety of problems encountered by a local district, nor does a permanent staff of consultants. The staff *must* be able to relate effectively with practitioners and reject the "professor" image of theoretician. Consultants on the staff should have teaching and/or administrative experience in local school districts except in rare cases in which the person has developed this ability to work with teachers and

administrators through other experiences. A service center usually employs a core staff of consultants who are as knowledgeable as possible in such areas as: characteristics and needs of gifted children, practical alternatives for educating these children (both programatic and instructional), group dynamics and other process oriented strategies, and finding and utilizing available resources. The center attempts to develop a well rounded staff with a variety of subject matter, experiential, and personal backgrounds.

In addition to the core staff, which usually remains small, the center has available certain other consultants who may be called on to provide service in an area in which the staff may be weak. These other consultants may be "satellite teachers" who have completed training activities and established gifted programs in a school in the area. They may be consultants from a state with a strong gifted program. They may be the core staff of other similar centers, or they may be consultants selected in any number of ways because of expertise in certain areas. In the case of satellite teachers, state consultants, the school system or other employing agency must agree to release the person for a certain number of days, hours, or sessions before the person is designated as a satellite consultant. Some centers designate certain local projects as demonstration projects, and provide extra funding to the program in return for the services of project personnel.

This "satellite" system or "talent bank" must have available persons with expertise in such areas as necessary to assist most schools, complementing the talents of the core staff—evaluators, writers, artists, specialists in minority cultures, dancers, teachers, administrators, specialists in stimulating creativity, and various specialists in the education of the gifted in all subgroups.

Participants

"Participants" or recipients of services range from parents and other community personnel to the highest ranking administrators in the systems being served. The primary recipients, however, are teachers and supervisors directly responsible for programs. The majority of teachers involved in this training are regular classroom teachers at the outset of the program. As the program develops and changes, these trained teachers may be given special assignments in working with talented students or released time for acting in a supervisory capacity in the programs. Principals or supervisors involved are usually building principals or curriculum coordinators. Teachers and other personnel may or may not have previous training in gifted education.

Program Components/Activities

Since the Service Center model is so versatile and comprehensive, it can utilize a variety of submodels, including the institutes and demonstration centers described in this section. Centers can also cooperate closely with universities in providing preservice training and experiences.

There are two distinct types of functions in most service centers: (a) general services provided to the entire client group, and (b) specific services provided upon request to each client within the area to be served. General functions include such activities as:

- A frequent newsletter providing information of interest to teachers and administrators, events sponsored by the center, new ideas for teaching, national and state opportunities in education of the gifted, an idea exchange, programs in the area, etc.
- Periodic regional workshops or training sessions on topics of general interest to most schools—language arts for the gifted, independent study contract learning, strategies for developing creativity, make-it-and-take-it workshops in which teachers bring ideas to share with others (materials are available for construction of items appropriate for one's own class), creative dramatics, evaluation, needs assessment, individualizing instruction, etc.
- A library of commercially available professional books, curriculum materials, and magazines which can be checked out for trial and/or examination.
- A collection of mimeographed reports, teacher made materials, curriculum materials, teaching units, bibliographies, and teaching strategies available to visitors or through mail requests at no cost to the client.

Specific services depend upon the needs and requests of the client, but some examples of vehicles established for these purposes are:

- A list of persons in the talent bank (along with an explanation of their areas of expertise and services they are willing to provide) is circulated to programs in the area. Those desiring certain services then make the necessary arrangements with the center.
- At the beginning of the school year or at the outset of indications of interest by the schools, a member of the service center staff arranges meetings to determine the needs of the school, the roles and responsibilities of the center and school, and possible alternatives for training.

- Introductory meetings are held at the center for all who may be interested in utilizing the services of the center.
- Presentations describing the center's services are made at various professional meetings.
- All available training models or variations are utilized in order to provide necessary services.

Because the significant differences in service centers are determined by the nature of the situation and the clients to be served, descriptions are given for a nationwide system, a statewide network, and a local district inservice model.

The Technical Assistance Development System (TADS)

Although this particular system was not developed to serve gifted programs, it will be described here since evaluations have determined its effectiveness, and it has potential for use in gifted programs. Similar plans have been developed on a somewhat smaller scale for gifted programs, but they are in the formative stages and have not yet been evaluated.

Supported by federal funds and located at the Frank Porter Graham Child Development Center in North Carolina, this program was established to provide long term, consistent support to preschool programs for handicapped children. It provides a network of demonstration centers along with over 100 professionals around the country who are available to respond to needs in their area of expertise.

According to Gallagher (1974), key elements in the TADS program are needs assessment, the signing of a contract, and the talent bank. Needs assessment, finding out exactly what the client needs, involves about a day of intensive discussions with the program administrator and others in the situation. Some agreement should be reached on the present highest priority issues. This may be something as simple as the identification of screening instruments or something as complicated as the development of an initial program plan. In this process, the consultant plays both an active and passive role. He must accept the local personnel as experts on the local situation, but must also assist them in clarifying needs as they relate to his area of expertise.

The second key element is the signing of a contract. A written agreement is made, specifying the nature of assistance to be delivered, who will deliver it, and when. This contract is designed to eliminate the kind of "nonhelp" that occurs in casual consultant arrangements where the expert makes a short visit, delivers some instant wisdom, and avoids becoming involved in the specific problems of the local situation. The contract provides both parties with an evaluation of the status of the assistance to be delivered.

The third key element is the talent bank, which must include a number of people with varied skills and knowledges. These people are on contract with the system and on call for 5 to 20 days a year for program assignments.

Assistance in this system can be of different types. If there is a large commonality of needs in a state program, group training activities can be designed. If a need can be satisfied by program information, a consultant in this large network has a great number of resources on which to call.

Area Service Center (ASC)

A unique and well established gifted program service center network was set up in Illinois as a result of the evaluation of the state plan, particularly in relation to the partial success of the demonstration centers. They were designed to replace the demonstration centers as the primary agent for change.

Purposes

Rationale and Guidelines for Submission of Area Service Center Proposals (Gifted Children's Section, 1974), states that the purpose of the ASC is "to provide for all Illinois educators and other citizens convincing and readily available assistance in developing a number of approaches in the school districts for the education of gifted children" (p. 2). They are designed to use the resources of people and funds in service and training activities, and charged with the responsibility of carrying the process of change through all stages, from initial awareness to institutionalization.

Since teacher and staff training is the most important aspect of program development, the major function of the centers is to provide training opportunities for educators at all levels. This training is oriented toward producing competent personnel in such areas as: (a) acceleration of the highly gifted; (b) individualized instruction through team teaching, nongraded plans, independent study, and other such methods; (c) special classes for the highly gifted; (d) special provisions for the culturally different gifted; (e) curriculum improvement through programs that emphasize high level thought processes, creativity, and divergent thinking; and (f) attention to both the affective and cognitive education of gifted students.

Sponsors

The Office of the Superintendent of Public Instruction receives proposals for ASC's from

school districts, institutions of higher education, and educational service regions in Illinois. If a proposal is recommended for approval by the Advisory Council (educators from outside the State office) and accepted by the Office, the Office of the Superintendent of Public Instruction negotiates a contract directly with the host agency. Since funds are appropriated yearly, proposals must be submitted each year, but applications for one or two successive years are considered on the basis of performance and available funds. The host agency must give evidence of its commitment by providing both adequate facilities and the support of staff members, administrators, and the governing board of the school district, college, university, or educational service region.

Staff

Each center employs a full time director along with, in most cases, one or two consultants, (depending on funds available). Some ASC's employ a number of part time professional staff members rather than one or two full time members. The staff is further expanded by the utilization of school district, university, or other specialized personnel on a contractual basis.

Requirements for full and part time staff, with the exception of satellite personnel with special expertise, are:

1. At least a Master's degree or the equivalent in graduate credit hours.
2. A minimum of three semester hours of credit in the education of gifted children, or teacher of a class in gifted education within 12 months of employment.
3. An administrative or supervisory certificate or other requirements of the host agency for administrative or supervisory positions. When the program thrust is specialized, certificates in special fields such as art or music are required.
4. Two years of teaching, administrative, or supervisory experience.

In addition to the requirements listed, members of the staff should have expertise in enough areas to be competent in serving a particular geographical area. Each should have a broad knowledge of education appropriate for gifted children in addition to a detailed knowledge of a specific area. More importantly, the consultants should be able to: (a) develop effective relationships with the clientele of the region, (b) demonstrate appropriate teaching strategies, (c) convert educational research and theory into practical strategies for educating gifted children, and (d) assume a variety of roles similar to those of the Community Change Agent described earlier in the section on Assumptions and Issues. In effect, ASC staff members must be potential, if not actual, effective *agents of change* in gifted program development. Knowledge, course background, certificates, and other such qualifications mean little unless a person possesses skills enabling him to effect meaningful changes in local district gifted programs.

Participants

Recipients of ASC services can be individuals (parents, teachers, college students, gifted students at all levels, other citizens), organizations (parent groups, educational committees, professional organizations, school boards, community organizations), or institutions (colleges, universities, private foundations, school systems) within a specified geographical area. The state is divided into nine regions, each containing one Area Service Center. In rural areas, one center serves as many as 24 counties, whereas three centers are located in Chicago and its metropolitan area. ASC's and their consultants can serve clientele in other regions cooperatively with the other centers involved.

Participants in training activities are usually regular classroom teachers, with gifted program directors and other administrators next in frequency. In a survey of ASC clientele selected from regular mailing lists, 64% were teachers, 18% reimbursement directors, 15% administrators, and 3% were engaged in other occupations.

Program Components/Activities

Specific activities and services depend on the geographical area to be served and the needs of the clientele, but Area Service Centers do have certain common characteristics. Some are required by the guidelines. For example, they must:

- Be designed to meet the needs of a specified geographical area.
- Be patterned on a recognized model for creating change – with a full sequence of functions from development of awareness to institutionalization.
- State objectives in measurable terms.
- Prepare standards for assessing performance.
- Provide training activities.
- Provide expertise in several areas of education.
- Provide basic financial support of ASC activities, including evaluation.
- Provide services that allow for the wide range of definitions of giftedness submitted by school districts in the region. (Schools must develop programs in one or more of six areas of talent – general intellectual ability, specific academic apti-

tude, creative thinking and production, leadership ability, visual and performing arts, and psychomotor ability.)

- Perform a needs assessment of ASC clientele each year.
- Develop consistent goals, objectives, activities, and evaluations based on *Action Goals for the Seventies*, a document representing the public's opinion of directions to be taken by education in the state.
- Complete an overall evaluation of their goals, objectives, and activities each year including reports from a number of state officials who visit and monitor the center regularly (Gifted Children's Section, 1974).

Certain other common characteristics are determined by the nature of the ASC concept:

- Utilizing service delivery systems, such as workshops (both region wide and in single districts or schools), summer institutes, demonstration sites, one to one consultation, field assistance in classrooms, newsletters, materials dissemination, and telephone calls/correspondence.
- Fulfilling functions such as inservice training, program development, evaluation assistance, and dissemination of information and materials pertinent to gifted program development.
- Dealing with content such as awareness of multiple kinds of giftedness and talent, identification of gifted and talented youth, topics related to state program requirements and proposals, curriculum development and revision, teaching methods in all subject areas at all grade levels, and evaluation techniques and methods.

Unique Program Components/Activities

The amount of emphasis placed on types of services, functions, and content area by each service center varies according to the region being served. For example, one of the centers located in the Chicago metropolitan area only serves the Chicago school system. In this case, it must operate within the framework of the school system and provide more technical kinds of assistance. In the past a fine arts center served the whole state mainly through the other ASC's and thus was not heavily involved in such areas as evaluation, assistance with proposals, and field assistance in classrooms. In rural areas the school population is so scattered that most programs are in self contained classrooms. The emphasis, therefore, must be on techniques for gifted children within the regular classroom, while in more populated regions, special classes can be established more readily, causing a need for training in other program methods.

Other unique aspects of Area Service Centers seem to evolve as a result of continued contact with the geographical area. School districts and personnel are often impressed by the particular talents of consultants, and will request workshops on topics that previously have been popular or successful, or will request a certain service, from a consultant who has a reputation for being effective in a particular role. In one center there is a strong content emphasis on staff communication and group dynamics, while in another it is on creativity and techniques for individualizing instruction. In another center, the delivery method emphasized is the newsletter because of the creativity and special abilities of the consultant responsible, while in still another, field assistance and classroom demonstrations are emphasized more than in other centers due to the teaching ability of one of the consultants.

Inservice Training Techniques

Area Service Centers utilize a variety of models for inservice training, some of which are described briefly in the general section on service centers. Some models which have proven successful and have become widely used are the following:

Regional workshops. These are usually two day work sessions held in a centrally located area at a motel or other facility with comfortable meeting areas. Primarily designed to develop awareness of needs and program possibilities for gifted children, these workshops are relatively short, exciting training sessions.

The committee approach. Often programs fail because not enough people in school districts advocate the establishment and continuation of a gifted program or because administrators are directing the program alone. If a program is directed by only one person, that person must be exceptional in motivating teachers, understanding highly particular problems, and being an expert at everything related to gifted education. For these reasons, some ASC's insist that a committee be formed, consisting mainly of teachers, to supervise the program, advise the director, and participate in training activities. In addition to developing a number of local advocates, this method provides for in-depth training of a few who can then assist in training others. New committees can be formed as new programs are added and old programs institutionalized.

Demonstration teaching. An ASC consultant may be called on to demonstrate a particular technique, a general teaching principle, or the use

of certain materials in a certain school or classroom. This can prove to be a highly effective training device if time is set aside before and after the demonstration for conferences with teachers to explain the strategy and talk about similar techniques, and problems, and how to proceed. Involvement of a number of teachers (by providing substitutes to release them for a period of time) can make the visit more efficient.

Field assistance. Assistance in one's own classroom can often mean the difference between self confidence and total insecurity in using a new strategy. Visits must be nonevaluative and made by someone able to come up with a variety of suggestions for accomplishing certain changes. Field assistance often provides followup to participants in an intensive training experience.

Monthly training sessions. A form of in-depth training similar to a summer institute, these workshops can be provided for either one or several school districts. The same teachers are released from classes for one half day or one full day every month and are given intensive training in an area related to gifted education. An example of this model was a series on "Developing Creativity Through Language Arts," where five teams of four teachers each met at the ASC for one day each month. In another instance, one school district planned to train (in depth) 12 teachers each year. The ASC personnel went to the school once each month where they met with six teachers all morning and six teachers all afternoon, dealing with topics requested by the teachers or topics the consultants felt were necessary. Some of the advantages of this arrangement are that: (a) teachers can freely exchange ideas; (b) there is time between sessions to try out new ideas presented, and then to share the problems and successes with others; (c) consultants can help to identify problems and solutions; (d) certain "assignments" can be given, such as trying out one new technique; (e) a trusting relationship is developed between teachers and consultants; and (f) there is evidence of a strong commitment of the administration.

The team approach. A unique plan was developed in one large school system that combined total staff development with leadership training. At the beginning of the year, meetings were held with principles of all elementary schools in the district, curriculum coordinators, and members of the top level of administration. The purpose of these sessions was to develop an awareness of possibilities for meeting the needs of the gifted and to begin the development of positive attitudes toward acceptance of change. After this initial series of meetings, each principal identified a teacher to be the second of a two member team which would be responsible for providing training for the rest of the staff. For five months, the entire ASC staff and area supervisor would spend a day with the building teams, giving them a number of strategies and background information for one-half day workshops that would be presented for the entire staff of their school the following week. Often the last part of the day was devoted to a planning session with curriculum coordinators and ASC consultants available for assistance. As an added thrust, four schools were designated as target schools with the addition of an ASC consultant to the team. The advantages of this model were numerous, including a chance to share successes and failures with other inexperienced leaders, feelings of cohesiveness in the group of leaders, the training of large numbers of teachers by only four consultants, and the increased acceptance of ideas from the administration because a fellow teacher was on the team.

A Local District "Service Center"

The service center concept can and has been employed in local school districts by applying certain general principles. Although several similar programs exist, only one will be described.

In a school district of 10-15 schools, two people are designated as gifted consultants. Their charge is to develop and improve gifted programs in the school system by providing whatever developmental and program assistance is needed in each school. According to needs assessments, these services range from direct teaching of gifted children to arranging inservice training sessions for teachers. In one school with a well developed program, a consultant was needed to give extra attention to a small group of highly gifted students, whereas in another school that was totally individualized, a consultant was needed to assist each teacher in providing enrichment activities for students. Other services of the consultants have been: (a) development of curriculum materials for a class for underachieving students in Junior English; (b) coordination of a committee responsible for the high school independent learning program (including training activities, materials development, identification, and any other needed assistance); (c) organizing parent groups; (d) providing classroom demonstrations; and (e) maintaining a library of professional and curricular materials.

As a result of several year's work, the consultants also had available a number of trained teachers and administrators who could be called on to assist in their area of expertise. Additional personnel

could be obtained from the Area Service Center and other gifted programs in the area.

The consultant services, which were administered through the director of special education, were funded by categorical monies from the State. This concept has been an effective model for program development in the district.

Evaluation

TADS (Technical Assistance Development System) does not involve gifted programs, and evaluations of similar systems in gifted education are not presently available. Therefore, evaluations are only reported here for the Illinois Area Service Centers. Area Service Centers have now been in operation on a statewide basis for five years. (Two were established a year earlier to test the feasibility of the concept.) Although a longitudinal study similar to House's four year evaluation has not been conducted, Area Service Centers have undergone continual assessment and reassessment through outside agencies, the State office, and self evaluation.

A year after the establishment of the state network, a group from Ohio State University was asked to conduct a replanning study designed to assist the program to utilize the results of the longitudinal study in planning future directions for the program. General recommendations related to the ASC's were: (a) continued expansion, including additional staff, more funds, and additional centers; (b) a few specialized centers located in key areas of the state, e.g., a center specializing in education of the disadvantaged should be located in or near East St. Louis, a concentrated low income area; and (c) ASC's should continue the types of services they have been providing in the past.

Each ASC employs self assessment techniques, usually with the aid of an outside evaluator. These evaluations are either formative, to provide input during the course of operation which would either affirm present methods or suggest other directions, or summative. A summative evaluation is a compilation of data collected over a period of time and reported at the end of a specified period of operation. Some evaluations were both formative and summative.

The individuality of evaluations allowed very little statistical summary. Evaluation experts within the State office, however, did identify and report certain commonalities (Program Assessment and Evaluation Unit, 1973). Results of these individual reports were analyzed on the basis of their relationship to recommendations in the Guidelines and on the basis of their effect in fulfilling needs expressed in *Action Goals for the Seventies*, a document developed through extensive involvement of the citizens of the state. This unprecedented document, containing substantive goals for the Office of the Superintendent of Public Instruction, outlined citizen perception of needed directions for education in the future. The evaluators concluded that:

> the call for expansion seems to be born out by the conclusions of individual ASC evaluations, especially as compared to the needs of the future as directed by the *Action Goals*. It is evident that as a delivery system, as an agent of awareness, and as a factor in the implementation of sound programs for gifted students, the ASCs in two years have proven themselves to be a most effective institution for change. (pp. 36-37)

Some of the evidence which led to this conclusion was the following:

1. There was a direct relationship between ASC training and program changes. For example, one report showed that 55 to 57% of participants reported specific program changes as a result of the training. In another report, out of a list of 25 changes, over one-third of the respondents checked at least 20 that resulted from ASC activities.
2. Large numbers of teachers participated in training activities—1,026 at one center, 2,567 at another, and 3,669 at still another ASC.
3. All evaluations indicated a positive contribution to the development of worthwhile local programs.

This evaluation again pointed to a need for expansion of the ASC staff and service in order to accomplish large scale, meaningful changes. Reports from two centers indicated that the staff was "spread too thin," while a report from another stated that over 40 requests for services had to be turned down because of overcrowded staff schedules. One evaluator suggested that the Area Service Center should invest more time in working with a smaller target population over an extended time as a solution to the problem of understaffing. Other recommendations for improvement were better utilization of research findings of experimental projects and more involvement in graduate and undergraduate degree programs.

In the first statewide survey of Area Service Center clientele, the Program Assessment and Evaluation Unit (1973) attempted to provide three levels of information: definitive (what an ASC is at this time), comparative (how well the centers have

achieved goals stated in their proposals), and catalytic (how much change has occurred in clientele as a result of their services). The survey requested information about the number of contacts with the ASC, types of services utilized, the most and least beneficial services, an example of change (if any) which resulted from contact with an ASC, and whether services should be expanded, reduced, or maintained at the same level. Results of this survey led the evaluators to conclusions related to the original goals of the evaluation. First, there was no one description that would fit all the Area Service Centers. The ASC's were designed to meet the diverse needs of a geographical region, and their activities reflected that need. Second, the centers generally achieved their stated goals and successfully concluded the activities proposed in the initial agreements. Third, there were many changes in the ASC clientele directly attributable to service center involvement.

One indication of the postive influence of change wrought by virtue of ASC efforts is the increase in number and percentage of Illinois school districts with gifted programs. In the year that the first two experimental centers were established (1970-1971), 31% (365) of the total number of districts in the state operated approved programs. The next year this figure increased to 35.5%, and after all the ASC's had been in operation for one year (1972-1973), the number increased to 466 or 42.5%. The percentage of districts participating has remained relatively stable since this report (43.9% and 41.5% last year and this year, respectively). It should be noted, however, that these statistics may reflect the tendency of ASC's to concentrate on a small number of schools and provide intensive services. Because there is a maximum level of meaningful service that can be provided with a fixed amount of funding, the majority of ASC's are not actively encouraging new districts to participate for fear of spreading existing services even thinner. It should be noted, too, that districts participating in the program were the larger ones, so that approximately 75% of the state's population of gifted children is being served.

Other evidence of change was the ability of 38% of the respondents to cite a specific example of changes that were results of ASC involvement. Another 24% were able to describe a general example. It is interesting to note, as well, that 42% of teachers and 41% of gifted program directors were able to describe a specific change, while only 22% of other administrators could be specific. Changes were analyzed according to attitude displayed: 93.5% were positive while only 6.5% were negative. Several of the negative comments pointed out constraints caused by limited ASC funding. The nature of changes reported was varied—developing varied ways of reaching gifted children, implementation of individualized programs in several subject areas, and fostering more openness to change, flexibility, and creativity on the part of teachers.

Of interest, too, are the services perceived as most beneficial in producing change. Teachers, program directors, and administrators all agreed that workshops and training sessions were the most valuable. Second in importance to teachers were summer institutes; to directors and other administrators, phone calls and correspondence were the second most valuable. The content which was most beneficial to both teachers and other administrators was related to teaching methods, while gifted program directors viewed program development and planning as the most beneficial.

Finally, results of the survey showed that 93% of the respondents indicated that ASC services should be increased or maintained at the same level. Of all the groups, teachers were the most favorable, with the majority advocating an increase in services provided.

As supervisor of programs for the gifted in a region served by one of the area service centers, the author was responsible for approval and monitoring of local programs for the gifted and was deeply involved in program development. In three years, some programs progressed steadily, with an increase in types of services provided as well as an improvement in quality and extent of total school involvement. Other programs showed relatively little progress. Of those with increased sophistication, an overwhelming majority were involved to a great extent with the ASC. Those showing very little progress were usually districts which did not request local assistance from the center. It is interesting to note that in many instances, directors of these lower quality programs would send teachers to regional workshops, but did not involve themselves. Changes could be observed in isolated classrooms, but the total program did not improve significantly.

Evaluation of the local district service model has shown that it is an effective method for encouraging and accomplishing local program development for the gifted. Several conditions must be met, however, before it can be effective:

1. The top administration must support the program actively. In fact, district policy should require that each school develop appropriate procedures for educating its gifted children.

2. The consultant(s) should be released from teaching duties for *at least* one-half of their time. Whether this time is spread out over the entire week or only two and one-half days of the week does not seem to make a significant difference.
3. The consultant(s) must be able to relate effectively to teachers, administrators, and gifted students at all grade levels.
4. The consultant(s) must be able to organize local resources effectively for program development and staff training.

Finally, the success of a service center model is based on the interrelationships of a variety of factors, and is in large part due to its foundation on an effective model of change. The next section presents an analysis of this theoretical basis along with a comparison of the summer institute and demonstration center models.

Comparison of Inservice Models

A crucial problem in teacher training is "what training is most productive for what persons and for what purpose?" (Kooyumjian, 1969). Very little research has dealt directly with the problem, although many evaluations of programs indicate that the type of training described has achieved certain results with the majority of the teachers involved. The variable ignored in most of these studies is the nature of the teacher/learner. In other words, what common characteristics—emotional, social, intellectual, physical—of teacher behavior or attitude changed as a result of a visit to a demonstration center, attendance at a summer institute, or participation in service center activities? Are there common characteristics of those who did not change? What were they?

Some of the evaluations gave indications of commonalities:

1. Administrators who changed as a result of visits to demonstration centers were younger and less experienced than those who did not make changes,
2. Science teachers and high school teachers were more likely to try out activities observed in demonstration centers than were language arts and elementary teachers, and
3. Area Service Center directors believe that younger or elementary teachers are more likely to change teaching methods than older or high school teachers who are involved in ASC activities.

Kooyumjian (1969) attempted to determine characteristics of teachers who are more likely to be successful in a workshop situation which is oriented toward change in teacher behavior but where a content background must be learned independently. She selected a group of achievers and a group of nonachievers in a test of content on gifted education, and compared them on the variables of intellectual ability, attitude or personality type, and background in training, experience, and job position. She concluded that

> high achievers had a higher level of mental ability, had less previous training in teaching gifted children, had a higher level of college training, fewer years of experience, more responsible positions in education, and attitude preferences more closely related to creative personality type. The data provide evidence that role function and the preference for Extraversion and for Intuition may be associated with success in independent study in content achievement.

She did not determine which teachers' behavior actually changed as a result of workshop participation, but other studies using the same personality inventory, MBTI, have determined that people with the personality characteristics which differentiated between the high and low achievers in Kooyumjian's study are those who accomplish the most changes in all fields of human endeavor. We can assume with some assurance, that these teachers are likely to be enthusiastic innovators in their schools.

Steele (1968) also found that the same scale of the MBTI predicted which individuals would be successful in T-group laboratory situations. Successful individuals tended to prefer such activities as helping, experimenting, becoming involved, and understanding processes and relating them to other situations more than unsuccessful individuals. Both Steele (1968) and Kooyumjian (1969) concluded that *the personality inventory should not be used as a method of predicting who changes in a certain type of situation, but as an instrument to help provide a wider range of training experiences suited to different types of individuals.*

Kooyumjian makes some other important recommendations:

1. "As adults have learned content background in workshops in which this is not the primary task, it will be worthwhile to further develop such programming" (p. 89).
2. Students in the academic course achieved more content knowledge than workshop participants, so if this is the only objective, an academic course seems to be the best method of training.

3. Since two of the workshops were not significantly different from the academic course in content gain, "if combining training in processes and training in content involves receiving less comprehensive preparation in either area, the accomplishments of the workshops seem to have been worth the investment" (p. 86).
4. "Inservice programs can be designed with building blocks of: content only, where this is the primary need; content, translated for use at appropriate teaching levels; experiences for attitude change with content background; experiences for attitude change with experiments designed for behavioral change" (p. 89-90).

Finally, while Kooyumjian's findings are important, it should be cautioned that a much greater amount of research needs to be done in this area before we can begin to predict adequately what type of training is most beneficial for what people and for what purposes. But must we wait until a significant amount of research has determined the type of training we should conduct? No. We must continue to try to develop a successful program based on the knowledge presently available, keep accurate records so others can profit from our experience, and continually modify our techniques based on the latest developments. There are also certain principles which can increase chances for developing a successful training program.

The most important general principles are those which make up the program's basis as regards some theory of change. Our problem is "What training is most productive for what persons and for what purpose?" In order for a strategy of change to be useful, it "must say something about (1) the innovation and its development, (2) the nature of the advocates, (3) the nature of the receivers, and (4) the type of transactional process intended" (Conrad, Colton, Kelley, & Brooks, 1972). Comparing the two, "what training" becomes *the type of transactional process intended*, "what persons" becomes *the nature of the receivers*, and "what purpose" becomes *the innovation and its development*. The fourth aspect of a change strategy, *the nature of the advocates*, is closely linked with both the purpose of the training and the type of training to be conducted, since the person(s) responsible for training activities will in large part determine both the transactional process and the purpose of the program. On the other hand, the purpose of the training may determine which person is responsible for it.

Havelock (1969), in his analysis of over 4,000 studies of change, concluded that there are essentially three discrete conceptualizations of the change process. All have certain strengths, weaknesses, and basic principles which are interrelated and interdependent. The three concepts are (a) Research, Development, and Diffusion Perspective; (b) the Social Interaction Perspective; and (c) the Problem Solver Perspective. Others have developed different conceptualizations of the change process, but usually these processes can be grouped into one of the above categories.

The first, Research, Development, and Diffusion (RD&D), has been described in the section on demonstration centers. This theory is built on the assumption that a consumer will accept an innovation if it has been evaluated objectively and positively. Its weaknesses are that it is overrational, over-idealized, excessively research oriented, and inadequately consumer oriented (Conrad et al., 1972). It places excessive emphasis on the assumption that a change will be adopted if it is shown to be effective, and too little emphasis on the unique characteristics, needs, or problems of each consumer.

The second, Social Interaction, is built on the relationship between "those who know" and "those who don't know." It emphasizes the importance of social relationships in the transactional network, the consumer's place in the network, the significance of informal personal relationships, the importance of a reference group, and different types of influence strategies at different stages in the adopting process. This change concept has as its weaknesses inadequate emphasis on the importance of the innovation and its development, little attention to the psychological processes inside the consumer, and little attention to the organization because of concentration on the individual as consumer.

The Problem Solver Perspective has several distinct stages: (a) to help the client identify his needs, (b) to help him formulate the need as a solvable problem, (c) to identify and locate resources relevant to the problem, (d) to identify potentially feasible solutions, (e) to translate the knowledge of a solution into a specific plan of action, and (f) to carry out these solutions with evaluation in terms of reducing the needs. An advocate or other person works with the consumer to help him find the innovations that make sense in terms of his own situation. Its weaknesses are excessive strain on the consumer, minimization of the role of outside resources, and the assumption that someone else has done the research and development.

The Problem Solver Perspective seems to me to be the single most potentially successful concept of change. The consumer's world seems to be a sensible place to begin since the change must have an effect there. The consultant is perceived in a positive way—as a helper, catalyst, or collaborator—

and inside resources are given equal weight with the outside. Self initiation and a positive attitude toward change create the best motivational climate for change. Other perspectives in combination can serve to meet diverse needs, and can be more potentially useful if they are combined in such a way as to complement each other.

As previously stated, demonstration centers are based on the research, development, and diffusion model of change. Part of the reason for the limited success of Illinois' demonstration centers was the way plans were carried out, but most important was their theoretical base—the R&D model did not take into account the consumer and his needs. When demonstration centers provide followup assistance to visitors (potential consumers), they appear to be able to assist these consumers in adapting the innovation to their situation—and thus increase the chances of adoption. The addition of this aspect illustrates the combination of elements of the problem solver perspective.

The service center model is based primarily on the problem solver concept of change. An advocate assists schools in identifying needs, stating problems, locating resources, developing alternative solutions, and implementing the plans they have devised. Weaknesses in the conceptual basis (excessive strain on the consumer, minimization of the role of outsiders, and the assumption that someone else has taken care of research and development) can be minimized by the addition of certain program components. If, for example, a service center designates several schools as demonstration centers, it in effect is emphasizing the developmental process of several innovations. In the case of a school district service center, the active support (or forceful tactics) of top administration is necessary to avoid excessive dependence on the consumer's initiative in solving the problem. If the reimbursement phase of the Illinois program were mandatory rather than permissive, the effect would be much the same on a larger basis. In other cases, when service centers actually provide some of the resources and solutions which they, in turn, help the consumer to identify, they are minimizing the strain on the consumer.

Other weaknesses are less important because of the nature of the system. One of the weaknesses of the problem solver perspective is its assumption that someone else has taken care of the research and development. In education, many times this is a fairly safe assumption. One of the biggest problems in education is the wide gap between research and actual practice.

Depending on the methods used and the particular format, summer institutes can be based on almost any theory of change. For example, in Torrance's workshop, all three concepts contributed to the methods used. When teachers were subjected to a period of "input" and spent time developing methods to be used, the R&D model was the important basis; when the directors placed teachers in informal situations with themselves as "helpers," the emphasis was on the social interaction theory. Certain strong social relationships were built between instructor and student that increased the chances for acceptance of the innovations. A further application of the social interaction theory would have occurred if teams of teachers from schools in the area had attended together. They would have developed a reference group with similar concerns, and would have built some supportive relationships among their small group.

As the teachers applied knowledge gained in the input phase to a teaching situation, they were assisted by the supervisors in solving their individual problems. In the last phase of the institute, the teachers spent time in identification of potential problems and solutions, which was an application of the problem solver perspective. A further extention of this concept would have been followup assistance to the teachers in their own classrooms.

It seems that the majority of unsuccessful institutes place undue emphasis on only one aspect of the R&D model—diffusion. If an advocate of a certain innovation spends two to four weeks disseminating information about, and expounding on, the merits of the particular methods he is advocating, the adoption rates will no doubt be low.

In conclusion, the problem of what training is most effective for certain people to accomplish certain purposes is one that has not been dealt with adequately in the research community. Until needed information is available, then, we will be better instructed to plan inservice training based on certain principles and theories of change.

Summary and Recommendations

Since traditional methods of developing trained personnel (through undergraduate and graduate programs at colleges and universities) have failed to meet the need for teachers of the gifted, we must develop new ways. One of the most important ways is to develop specially trained personnel within the ranks of those already teaching. In addition, inservice training will continue to be an important means for keeping teachers abreast of new knowlege, attitudes, and methods.

All of the models described here are based on some theory or theories of the change process.

They can be improved by correcting certain weaknesses in their theoretical base as well as by modifying the specific techniques used. Even though the service center model is the most versatile of the three presented and is based on a sound theory of educational change, there is a need for a variety of kinds of training to serve a variety of people and purposes.

Base on Sound Theory

It is recommended that inservice education, which seeks to accomplish certain changes in classroom methods, be based on a sound theory or theories of change. Consult the section on Comparison of Inservice Models for rationale and suggestions.

Combination of Theories and Practices

It is recommended that inservice models should combine certain theories and principles in order to minimize the weaknesses inherent in each. Comparison of Inservice Models gives rationale and suggestions for this recommendation also.

Continuing Education

It is recommended that inservice education should be continuing education. Teachers need to keep up with current educational theories, need to learn and develop alternative teaching strategies, and need to gain deeper understandings of interpersonal relationships in the classroom as well as in the school and community. Teachers can be expected to assume the responsibility for continued self improvement to a certain extent, but educational institutions must provide organized opportunities as well as support. One summer institute, a visit to a demonstration center, or attendance at a few two day workshops does not constitute an effective inservice program. Teachers must have *intensive, extended* training.

Successful Methods and Participation

It is recommended that methods be used which have been successful and which provide for maximum participation of the teacher in his or her own learning. Many of the same principles that apply to children's learning also apply to adult learning: individualize learning experiences, use of experimental learning is the most effective, teach the process as well as the content, teach the teachers to accept as well as cause change, develop creativity and improve self concepts, and develop skills of acquiring, processing, and applying knowledge. The following is only a partial list:

- Self assessment—including the analysis of present behavior, the setting of goals for changes, the identification of resources to accomplish change, and the evaluation of progress toward stated goals.
- Practice in realistic settings.
- Development of an intimate knowledge of teaching methods by demonstrating to the greatest extent possible with your own behavior and methods the particular methods and techniques you are trying to teach.
- Feedback from and interaction with other teachers.
- Group solving of the problems.
- Opportunities for teachers to present "sessions" or experiences for other teachers.

Giving Teachers Specific Examples

Even though teachers need a theoretical basis for the changes being advocated, it is recommended that they must be given adequate specific examples of classroom applications as well as assistance in developing these applications for their unique situations. Many times teachers already understand and believe in a particular theory, but because they do not have specific ideas to use *tomorrow*, the theory never becomes practice.

Starting with Change Minded Teachers

It is recommended that, initially, programs train those teachers who are the most change minded. They will be more likely to actually initiate innovations, and will be advocates of the program. Other teachers who change more slowly and who rely on their judgment of successful practices to make decisions about methods to use may change techniques or at least be more receptive to change if they have observed a successful new program in the classroom of a fellow teacher. As an added bonus, the entire gifted program probably will be more successful if teachers are selected on the basis of a positive attitude toward change. In the longitudinal study of Illinois Gifted Programs (where practically all the teachers selected for the gifted program came from the existing faculty), House and his colleagues found that in the better programs, teachers were selected because they were change minded. Selecting teachers because they volunteered or were interested was negatively correlated with quality. Selecting teachers on the basis of perceived competence, previous training, or experience had little effect, and neither did amount of past training. Total years teaching and years teaching in the gifted program also had no effect (House et al., 1970).

Selecting Leaders

It is recommended that programs select carefully those who will be the leaders of inservice training.

Simply knowing the subject or being a good teacher is not enough for an inservice trainer – he or she must be able to develop meaningful relationships with teachers, must be skilled in problem solving methods, must be able to demonstrate effective teaching techniques – in short, must be a Community Change Educator.

Certain recommendations in the preservice section are also important in inservice. *The first, second, fourth, and sixth are the most relevant.*

Appendix:

University Training Programs in Education for the Gifted

The universities listed below offer either a Bachelor's, Master's, or Doctorate in the education of the gifted. In many cases major universities will make provisions for emphasis on education of the gifted in certain doctoral programs; however these are not listed. Those listed have *planned programs* in this field.

In addition, many universities offer one course or a few courses. However, this is not considered a program, and only those universities offering a degree are listed.

Alabama

Department of Special Education
University of South Alabama
Mobile, Alabama 36688
Bachelor's and Master's

California

Department of Special Education
California State University
Long Beach, California 90840
Master's and Doctorate

Connecticut

Department of Special Education
Southern Connecticut State College
New Haven, Connecticut 06515
Master's

Department of Educational Psychology
Box U-64
University of Connecticut
Storrs, Connecticut 06268
Master's and Doctorate

Florida

School of Education
University of South Florida
Tampa, Florida 33620
Master's and Doctorate

Georgia

Department of Educational Psychology
University of Georgia
Athens, Georgia 30601
Master's and Doctorate

Department of Special Education
Georgia State University
33 Gilmer St. S.E.
Atlanta, Georgia 30303
Master's and Doctorate

Illinois

Department of Special Education
Southern Illinois University
Edwardsville, Illinois 62025
Master's

Foster G. McGaw Graduate School
National College of Education
2840 Sheridan Road
Evanston, Illinois 60201
Master's

School of Education
Bradley University
1502 West Bradley
Peoria, Illinois 61606
Master's

Michigan

Department of Psychology
University of Michigan
Ann Arbor, Michigan 48104
Education Specialist Degree (School Psychological Consultant for the Gifted)

New York

Department of Special Education
Teacher's College
Columbia University
New York, New York 10027
Master's and Doctorate

Ohio

School of Education
Kent State University
Kent, Ohio 44240
Master's and Doctorate

Epilogue

If we as educators are going to prepare our gifted students for success in a world in a constant state of change, we must prepare teachers for their role in the change process. If teachers are the key to a successful program for gifted students, then the teacher trainer is the "locksmith" who shapes and molds the key and is the most important link in the whole process. A teacher training program must cause change either directly or indirectly at all levels—school, teacher, and student. If this seems an impossible task, we might well be instructed by the words of Robert Theobald (1970) in his introduction to *Alternative Futures for America, II*:

> Some will say that the initiatives suggested herein are impossible. The only reply to such a charge is that we must all therefore dare to do the impossible. All current initiatives within the realm of the possible appear to be failing.

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